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**THE NATIONAL ASSOCIATION OF
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The Science of Aeronautics in the Secondary Schools

By Staff of Civil Aeronautics Administration

Washington, D. C.

THIS INFORMAL statement presents a summary of the most important questions which have developed in the numerous clinics on aviation education which have been attended by administrators, teachers, and educational consultants of the Civil Aeronautics Administration. The answers represent the consensus of opinion of a large majority of the participants in those clinics.

It is hoped that this statement will help many administrators and teachers who are confronted with similar questions and problems. Naturally, final decisions are to be made by the schools themselves; hence specific solutions for certain problems incident to introduction of aeronautics courses in high schools are not included in this summary.

1. What are the purposes of teaching the science of aeronautics in the secondary schools?

The purposes of the program of aviation education in the secondary schools are: (1) to prepare youths for training in the air branches of the Army, Navy, and Civil Aeronautics Administration War Training Service; (2) to prepare youth for participation in the development of private flying and air commerce in the postwar world; (3) to prepare youth to understand the social significance of the airplane; and (4) to develop a course in science within the framework of general education which will teach the most important principles.

2. Why should the schools be concerned about aeronautics education?

Before we attempt to answer this question, let us consider the reasons for having schools. Why does society support a program for the education of youth? The obvious answer is that society expects its schools to perform certain services which will be of advantage to society. Therefore, schools are under obligation to recognize and attack the vital problems confronting society. This point of view is not newly created by the war; it has been true since the beginning of public-supported education.

Since the beginning of the 1900's our civilization has been transformed by development of new means of transportation and communication. Distance and time have both been shrunk. Isolated individuals, communities, and nations have been brought close together. In many respects the everyday life of average citizens in 1940 was as different from that of 1900 as was life in 1900 different from that of the 1700's.

Schools cannot escape their responsibility to society. They must educate for the air age if we are to win the war and maintain a position of responsible leadership in the inter-dependent world that will follow. Schools must educate for the air age if they are to fulfill their obligation to present-day youth who need preparation for the world in which they must live. Manufacture of air-

planes is not enough. To achieve its potential position in the postwar air age, America's energies today must be directed toward basic aeronautical education of youth now in the schools, as well as toward youth and adults outside the schools. It has been aptly stated that in the days of land power the Roman Empire became strong because every Roman was a soldier. In the days of sea power Britain flourished because each Britisher was a sailor at heart, even if he never went to sea. We have entered the era of air power and if our nation is to preserve the heritage of its free institutions, from now on every American must be, in his heart at least, an airman.

3. *Will the course in the science of aeronautics be helpful to prospective members of the air branches of the Armed Services?*

The teaching of aeronautics courses to qualified secondary-school students has been endorsed by the air branches of the Army and Navy. The Armed Services seek to assign men to branches in which their aptitude and training will make the greatest contribution. Therefore, youths who have successfully completed aeronautics courses are more likely to be placed in the air branches than are those who have merely expressed an aviation interest but have not yet developed it in any concrete way.

Authorities in the air branches of the Armed Forces have stressed the importance of developing a proper mental attitude, full understanding, and proficiency in air operations. To reach this goal requires a considerable period of aviation education and training; to provide that period, it is extremely desirable that such education be started at an early age. Obviously, youths who have completed an aeronautics course in high school will have developed these essential qualities and will be equipped to take fuller advantage of subsequent training in the air forces.

4. *Is the aeronautics course suitable for students who will not become pilots?*

The content of aeronautics courses in secondary schools is general and elementary, and its usefulness is therefore not limited to prospective pilots. Even in the military air services, where the proportion of flight crew to ground crew is much greater than in commercial aviation, approximately eight persons are required on the ground to keep one man in the air. Courses in the science of aeronautics provide training which is a minimum for beginning flyers but which is also often used directly by ground crews. A general aeronautics course opens the door for a glimpse at many specialized aviation fields. Through further specialized study, students with interest and aptitude can enter those fields.

Thus, for students who wish to enter the aviation field, aeronautics courses provide good preparation, not only for potential pilots but for potential navigators, bombardiers, meteorologists, operational personnel, aeronautical designers, and research engineers. Beyond these specific results, all students will benefit from the general educational values which this course pro-

vides. It will assist in creating a sophisticated citizenry which should and can understand the implications and impacts of the air age on social, economic, and political problems. Because students are highly motivated to learn the scientific principles of aeronautics, the course has no peer in the high-school curriculum for the teaching of the general principles of science which are of importance to everyone.

5. *What is the relation of the CAA program to the pre-induction courses?*

Courses in the science of aeronautics and pre-induction courses are based on a common objective with respect to the war. Both prepare youth to help win the war. But the aeronautics courses are not limited to this objective. They are needed to prepare youth for postwar expansion of air commerce and private flying, and they are an important part of general scientific education on the secondary-school level.

6. *What is the relation of aviation education to the Victory Corps?*

Although aeronautics courses are not dependent on the establishment of a Victory Corps and *vice versa*, the relation of the Aviation Education Service and the Victory Corps is a co-operative one. No conflict exists between these programs. Aeronautics courses, with certain other requirements, qualify students for membership in the Air Service Division of the Victory Corps.

7. *Is the teaching of aeronautics a temporary war measure, or will it remain in the postwar curriculum?*

Study of aeronautics contributes specifically to development of a reservoir of potential air-force personnel; it also provides training which can be freely utilized in many occupations which are directly or indirectly associated with civil aviation. These advantages emerge because the basic elements of aeronautics are equally applicable to civil and military aviation.

Important as is aviation's contribution to vocational education, that is not the basic reason for its inclusion in school curriculums. Even stronger ground for believing that aeronautics courses will be part of postwar curriculums lies in their obvious importance as general education. Students will study aeronautics to obtain preparation for living in a three-dimensioned world.

Thus, aeronautics represents science in its best form. It is basically cultural and contains broad application to the living environment of civilized men; at the same time, it contributes directly to vocational education, in the same sense in which training in sculpture prepares sculptors to earn their livings. A practical difference between these two fields is that quantitatively, society is prepared to support only a few sculptors. On the other hand, aviation can contribute qualitatively to broader culture for millions of people.

8. *Should schools discontinue teaching any regular courses to make room for courses in the science of aeronautics?*

Courses to be included in a curriculum need to be determined by the relative values of various offerings which are practicable in a particular school.

Courses to be dropped or added involve problems which must be solved under the conditions which obtain in each specific school situation. Therefore, curriculum questions must finally be answered by each local community for itself.

Appreciation of the airplane's technical potentialities and limitations facilitates recognition and understanding of changes which aviation has already made and will continue to make in our social and economic culture patterns. Commerce, recreation, industrial and municipal planning, and international relations, for example, are all likely to be changed fundamentally through development and exploitation of the airplane's potentialities the years that are ahead.

9. *Who should take courses in aeronautics?*

In an air age an understanding of aeronautics and its social implications is valuable for everyone. It should be offered as an elective subject to all boys and girls while they are in high school. It is a basic course for those who are to be engaged in flying, either in military or in civil aeronautics. Although not basic for those who plan to work in ground aeronautical occupations, it is extremely valuable for them. It is excellent general education for students who are not planning to fly or to engage in aeronautical occupations. And it is for girls as well as for boys.

10. *What is the subject matter of the science of aeronautics?*

The aeronautics course covers the science of aviation and its social significance. It includes these topics: fundamentals of airplane construction; principles of flight; control of planes; characteristics of the atmosphere, as well as weather conditions which affect flying; power plants or airplane engines; maintenance of communications during flight; methods used by pilots for finding their way from place to place; and rules of safety in flying. More briefly, the subject matter of aeronautics concerns structure and design of airplanes, aerodynamics or theory of flight, meteorology, power plants, navigation, communications, and civil air regulations.

11. *In what grades should the course in the science of aeronautics be taught?*

Aeronautics education, of course, can be introduced into the school program beginning with the kindergarten. Schools cannot afford to neglect the education of youth with respect to so vital an aspect of everyday living. Teachers of English, arts, biology, social studies, mathematics, in fact, all teachers have unique opportunities to enrich and vitalize their subjects. Grade placement of regular courses in the science of aeronautics demands more specific consideration. Generally, enrollment in such courses is open to students in either of the last two high-school years. When equipment and qualified teachers are available, some schools offer more extended programs, including vocational training.

12. *On what basis should students be selected, assuming that more students request admission to aeronautics courses than the program can adequately make provision for?*

Many factors, some peculiar to local school situations, are involved in the answer to this question. In general, students in their last school year should be given preference over students who have two more years. Because of the need to prepare boys for military aviation for the duration of the war, they should receive preference over girls. Boys of seventeen, if otherwise equally qualified, should be given preference over sixteen-year olds. If further restriction is necessary, boys who meet the selective criteria for enlistment in the air services should receive preference over those whose physical conditions may disqualify them.

Viewpoints concerning physical fitness for flying have changed rapidly. If all students who take courses in aeronautics were destined to become military flyers, we might specify generally that prospective students must meet the physical qualifications of the air forces. Even in military aviation, however, different types of flying duty require different physical qualifications. Flight crews greatly outnumber pilots, and ground personnel outnumbers flying personnel. Successful performance of many important tasks, both in military and in civil aviation, does not depend upon special physical fitness. Therefore, only lack of teachers might make it necessary to limit enrollments in aeronautics courses to students preparing for military service. When this condition arises, physical examinations may be justified as prerequisites.

If more students elect courses in aeronautics than can be accommodated, as has happened in some schools, the problem should be stated this way: "Isn't there some way we can provide the course for all who want it?" rather than this way: "How can we cut down the size of the group?" Of course, if the answer to the first question is "No," then application of selective procedures is inescapable.

13. *What courses should be prerequisite to enrollment to the aeronautics course?*

Few conferences on aviation education have closed without a lively discussion of this problem. There are two points of view. It is generally agreed that since the study of aeronautics involves some mathematics and some science, students who understand those subjects have an advantage. There the agreement stops, and the divergence of viewpoints begins.

One point of view holds that physics and mathematics courses should be made prerequisites. However, most of those who take this position would permit students to enroll simultaneously in physics and in aeronautics. That concession seems almost inescapable, unless enrollment in aeronautics is to be greatly restricted, since only a small proportion of students enroll in physics, and usually in their last high-school year.

Another point of view holds that any mathematics or physics needed in the study of aeronautics can be taught in connection with the course itself. This approach is defended on the ground that aeronautics affords a realistic and practical setting for the application of simple mathematics and physics concepts. Those who support this viewpoint further content that the resulting learning is effective because students recognize the applications, understand their meanings, and thus acquire convincing purposes for mastering those tools.

These differences in viewpoint arise in part from varying judgments as to the amount to be accomplished during one year of aeronautics in secondary schools. A course in high-school chemistry is not intended to provide complete training for research or industrial chemists; a course in physics is not planned to educate fully civil or mechanical engineers; a course in physiology or biology in secondary schools is not expected to complete the schooling of pharmacists or doctors of medicine. Similarly, a one-year course in aeronautics which is taught to boys and girls on the secondary-school level should not be expected to turn out full-fledged aeronautical engineers, navigators, or meteorologists. Those occupations all require extensive periods of preparation. Schools should plan aeronautics courses as they plan chemistry, physics, or biology courses, with their scopes and purposes explicitly understood. School authorities who require mathematics and science as prerequisites for the aeronautics courses are probably thinking in terms of advanced aviation courses. They fail to recognize that there is elementary work in aeronautics just as in chemistry, physics, and biology.

Many teachers have concluded that student interest in aviation, plus willingness and capacity to learn, constitutes the soundest basis for establishing enrollment qualifications. These criteria may offer a solution of the prerequisites problem.

14. *How much time should be given to aeronautics in the daily schedule?*

The science of aeronautics is recognized as a regular high-school course. It is accepted for college entrance by 96 per cent of American colleges and universities, and is fully recognized by the leading accrediting agencies. It should therefore receive as much time in the daily schedule as any other regular one-unit credit course.

15. *If school programs cannot be modified to include courses in aeronautics, can aviation content be successfully incorporated into existing courses in physics, mathematics, industrial arts, and other subjects?*

Introducing aeronautics material piece-meal into other courses is not a satisfactory method for providing students with opportunities to study the science of aeronautics. However, if no other solution can be found, this one is preferable to none at all. Ideally, aeronautics should constitute at least a full year course. Inclusion of aviation content in related science courses would un-

doubtedly provide timely and interesting illustrations of many basic principles. This approach should stimulate alert teachers in all subject areas to be on the lookout for opportunities to relate conventional subject matter to students' aeronautics interests. However, few students would be enrolled in all courses which were enlivened by aeronautics content. And the total of aeronautics content offered in all related courses would seldom be the equivalent of a complete course in aeronautics.

In some schools several teachers might be interested in and qualified to teach several distinct aspects of aeronautics. They might combine their efforts to offer an aeronautics course, each person offering the unit in which he was best qualified. Sometimes, too, arrangements have been made for one well-qualified teacher to offer courses in several schools.

16. *Could adequate provision for aeronautics be made in the extracurriculum program?*

Aeronautics interests of boys and girls provide opportunities for extending and vitalizing extracurriculum programs. Clubs based on specialized aeronautical interests, such as model building and flying, are popular among students. The Junior Air Reserve of the National Aeronautic Association, the Air Scouts of the Boy Scouts of America, the Civil Air Patrol Cadets, and the Victory Corps illustrate organizations now in existence. But limiting the study of aeronautics to extracurriculum programs represents inadequate recognition of the importance of this field. At best extracurriculum programs merely supplement regular courses, as do aeronautics materials which are incorporated into physics and mathematics.

17. *What equipment is needed for teaching the science of aeronautics on the secondary-school level?*

Lack of equipment need not interfere with the addition of aeronautics to school programs. Some demonstration apparatus may be obtained from ordinary sources, and resourceful teachers and students can provide satisfactory equipment for class use. Both flying and non-flying model airplanes can be built, skeleton planes showing the operation of control surfaces can be assembled, and home-made wind tunnels provide useful apparatus for pre-flight aeronautics instruction. Wall charts which present the nomenclature of plane parts and provide useful data on plane identification can be obtained at low cost. Schools with physics laboratories have ready sources of equipment which is useful for demonstration purposes. Obsolete and obsolescent airplanes and airplane parts are being distributed from Army and Navy sources through the services of the Aviation Education Service of the Civil Aeronautics Administration. There is a growing supply of excellent films and film strips. Special aeronautical charts for educational purposes are obtainable. Air transportation companies, plane manufacturers, and instrument makers often distribute free or inexpensive educational materials.

18. *Are adequate instructional materials available for teaching aeronautics?*

Few courses have ever been added to school programs with as much basic instructional material as has been available to aeronautics during its first year. The *Bibliography of Aviation Education Materials*, one of the books in The Air-Age Education Series, contains 139 pages of listings. Achievement tests are now being prepared by the Co-operative Test Service of the American Council on Education. Numerous other aids to instruction are also available.

The Civil Aeronautics Administration has prepared a bulletin entitled *Special Study References in Pre-Flight Aeronautics*. This annotated list is especially useful in classes whose students intend to take the ground-school examination required for the CAA Certificate of Aeronautical Knowledge.

19. *Are trained teachers available for the teaching of aeronautics classes?*

The teacher problem has already been solved in thousands of secondary schools. During the summer of 1942 about 2,000 teachers were admitted to regular CAA Civilian Pilot Training Ground School courses. During the spring of 1943 more than 4,000 others have had similar opportunities through special ground-school courses which were made available by the co-operation of more than 150 colleges and universities with the CAA. During the summer sessions of 1942 and 1943 hundreds of teacher training institutions of all types offered additional aeronautics courses.

Even when specially prepared teachers were not available, many successful classes in the science of aeronautics were conducted during the past year. Instructional personnel consisted of carefully selected teachers who had had adequate training in academic science fields but who at the same time were interested in aeronautics. Such teachers have eagerly availed themselves of various in-service training opportunities, such as afternoon or evening courses, correspondence courses, and self study.

20. *When can high schools be expected to offer flight training?*

During the summer of 1942 the problems of flight training for high-school students were studied in twenty-two experimental centers as a phase of the CAA's Civilian Pilot Training Program (now the CAA War Training Service). The flight training facilities of the former Civilian Pilot Training Program are now used exclusively for military purposes. If and when necessary authorization is given and equipment made available, the CAA will develop a program of flight instruction as an additional service to high schools.

21. *Where can I obtain additional information about courses in aeronautics?*

If you are a teacher, discuss this question with your high-school principal or superintendent; if you are an administrator, consult your state department of education. Each state department staff has a member who keeps informed on recent developments in aviation education. The Aviation Education Service of the Civil Aeronautics Administration maintains a technical service which provides state departments with information.

Education for the Air Age*

THE EMERGING AIR AGE

THE WORLD's entrance into the air age has created unique responsibilities for educators, for the airplane may well prove the most ramifying force which has affected human affairs since the emergence of the Industrial Revolution in the early 1700's. Its impacts are steadily fanning out in countless directions, and these trends must be followed and understood by an education which is adjusted to the times.

The pressing obligation of schools to educate youth for life in a shifting era is not the simple task of merely re-applying conventional educational procedures. Ultimate adjustment of schools to the air age involves a clear recognition of the dual nature of the problem: the immediate effects of swift transportation, and the long-term adjustments in society to be worked out over a longer period.

The first of these tasks consists of aiding both youth and adults to appreciate the fast transportation and communication created by planes. An outstanding example today is witnessed in the development of warplanes.

The adjustments in society present a problem of great magnitude and one that cannot be met in a month or a year. School people cannot measure their plans for air-age education in terms of the present air war. Even now they are seeking perspective and attempting to catch at least the major outlines of aviation's long sweep into the future, for the changes to come may finally be vaster than any yet seen, or even imagined, and the air age may well offer man a challenge so powerful and insistent as to shake his faith in many of his present fundamental concepts. In fact our generation may be forced to a major re-interpretation of our physical world, our key social ideas, and finally our educational plans for youth.

The Physical Challenge of the Air Age

It may appear incredible that a single mechanical contrivance, such as the airplane, could significantly alter man's understanding of the physical world in which he lives and enable him to surmount nature's ancient hurdles, the oceans, the deserts, the mountains, and the rivers, which through the ages have thwarted and deflected him. It may not seem possible that man is at last free to satisfy his urge to move from place to place with the utmost speed and comfort. But the airplane has brought about these changes almost overnight.

As a consequence, our view of geography has been drastically changed. Planes have lengthened or deepened man's view of the world. The fact of flight has suddenly introduced man to an element in which he had not previously been at home. For ages he had watched with envy the creatures that

*A suggested program in *Pre-Flight Aeronautics* prepared by the Civil Aeronautics Administration, Department of Commerce, Washington, D. C.

were able to fly. Then, almost with one leap, he himself was able to mount into the air and look back confidently on the earth.

Prior to the air age man had spent centuries as an earthbound creature, scarcely more mobile than the majority of land animals. It is true that he early acquired amphibious skills which numerous animals possessed by nature. But, whether on land or sea, he remained at the bottom of the ocean of air, and with his swiftest means of transportation was able to travel little faster than the lower animals.

So after ages of two-dimensional life, man has learned within less than a generation to move freely and safely through the air. This step forward has placed him in control of every avenue of transportation: by land, over the water, and finally through the air. As soon as airplanes attained sufficient mechanical development to fly long distances over any surface—land, water, ice—old commercial bottlenecks were eliminated. Today fleets of planes are already transporting men and goods across the various surface of the earth.

The great speed and safety achieved by planes perhaps constitute the most profound aspect of man's conquest of the air. In the early seventeenth century sixty-two days were required for the Pilgrims to cross the Atlantic in sailing vessels; just a few years ago the fastest steamships completed the same run in slightly under five days; today airplanes speed over that distance in ten hours, and practically non-stop. When the time needed for an ocean trip shrinks from sixty-two days to ten hours, the world has grown shockingly small.

Not only has the plane shrunk the world, but it has at last brought to mankind the significance of a spherical earth as opposed to a flat earth. For more than four centuries the fact that the earth is spherical has been known but was not fully appreciated. The oceans and the land masses were conceived of as comparatively flat surfaces, rather than as the rounded sides of a huge sphere. But the plane has shrunk the earth by reducing travel time, and areas formerly reached by traveling east or west across land or ocean expanses are now reached by great circle flights northward and southward. Consequently, almost for the first time, man has obtained a truly comprehensive perspective of the world. At last he is able to visualize and understand the earth as a globe.

To record the effects of airplanes on geographical concepts, revisions are steadily being made in maps, which are basically diagrams setting forth man's ideas concerning the nature of the world. For example, when people believed in a flat earth, maps reflected that conception. After the earth had been circumnavigated, maps were drawn on rectangular sheets of paper and the ends brought together to form cylinders. These maps distort the earth's true size and shape, and their particular distortions have become part of our geographical thinking because we used no other maps in the schools. These Mercator projection maps are still used for navigation by sea, on land and in the air, but some

new map projections are now focused on the poles, around which are grouped land and water areas.

The polar projection maps reflect an earth conception which emerges from the third dimensional view made possible by airplanes. They make clear the changed conceptions of distance and direction which the airplane has forced us to recognize. But all flat maps, including polar projections, distort concepts of distance and direction in one way or another, and the result has been a phenomenal use of globes for the teaching of geography.

The Social Challenge of the Air Age

Expansive as are the effects of planes on man's concepts of his physical world, they may contribute even more profoundly to his social and community problems. For example, aviation seems certain to affect city planning, location of industries, and future developments in service transportation.

As America progresses more fully into the air age, we may expect to witness a vast increase in private flying. Whether the "family plane" will finally take the form of the helicopter or something entirely different, we do not know, but the "family plane" will undoubtedly become a reality after the war.

World travel, too, will be greatly affected in the future by aviation. For example, until recently it was necessary to make a trip to an ocean port, often a lengthy journey in itself, before embarking upon an ocean trip. In the air age, points of departure will not be limited to ocean ports, but towns which are now far inland will become ports of departure. Small, isolated communities of today may markedly expand because they will have achieved direct outlets to the world.

Swift passenger service already enables peoples of many nations to assemble quickly for business or leisure. The linguistic problems created by the presence of foreign visitors in this country, and increased air travel by Americans, will make linguistic versatility necessary. No longer insulated or isolated from other nations, we must learn to communicate not only with Latin-Americans, but with peoples of all parts of the world. And to converse with them intelligently we shall also need to understand their cultures and *mores*, their social and political philosophies.

The social implications of aviation will require not only encouragement, but also control so that planes may not again be turned into a human menace as they were by aggressor nations which are employing aircraft in ruthless war on peaceful peoples. Often before in human history, science produced devices which carried enormous social and humanitarian potentialities, only to have them devoted to purposes of destruction.

Airplanes can serve the highest ethical purposes: to relieve the suffering that follows in the wake of plagues, fires, and earthquakes, and to carry medicine swiftly across oceans and mountains.

The Educational Challenge of the Air Age

Aside from the immediate need of air personnel for war purposes, there is the long-range problem of retraining an entire people to live effectively in a drastically changed era.

To meet this need the Pre-Flight Aeronautics Program was inaugurated by the Civil Aeronautics Administration with the assistance of the United States Office of Education to encourage and assist secondary schools in the introduction of pre-flight aeronautic courses in their curriculums. During the first year of this program, 1942-1943, half of the nation's high schools enrolled approximately 250,000 students in these courses.

Flight training for secondary-school students has not yet been provided because of shortages in equipment and teaching personnel. However, preliminary experiments conducted by the Civil Aeronautics Administration with limited groups of high-school students have revealed that flight training of selected students can be done effectively and with a high degree of safety.

High-school aeronautics courses have also been supplemented by inclusion of aviation materials in established courses in related fields: mathematics, geography, biology, social studies, English, industrial arts, and these basic subjects have been rendered more timely and functional by this supplementation process.

Wide acceptance of the Pre-Flight Aeronautics Program immediately created two pressing problems: provision of adequate teaching materials for class use, and training or retraining of teachers for these courses.

Research projects were set up by the Civil Aeronautics Administration to develop aeronautics material designed to meet the needs of high-school teachers of pre-flight aeronautics. Two pre-flight aeronautics textbooks based on this material have now been published: *Elements of Pre-flight Aeronautics for High Schools* (Macmillan Co. 96c) and *Science of Pre-flight Aeronautics for High Schools* (Macmillan Co. \$1.32). These volumes, together with eighteen supplementary books, constitute The Air-Age Education Series.

To meet the need for teachers, the Civil Aeronautics Administration in the late spring of 1942 opened its ground-school courses to prospective high-school and college instructors of aeronautics. During the summer of 1942 many aviation courses were offered in teacher training institutions. In the spring of 1943 the Civil Aeronautics Administration again sponsored aeronautics courses in a group of selected training institutions.

Aside from the number of youths now in pre-flight aeronautics classes who will take their places directly in the field of aviation, within a decade or two, as the world moves more completely into the air age, countless others of these youths will assume public offices in various communities. They will have to wrestle with such problems as whether an air freight landing field should be built at the south end of town and a passenger one at the north end; whether

the plane landing strips at the air service stations should be enlarged to anticipate the increasing use of private planes, and what the dimensions of these landing strips should be; how large an air police force the city needs; with what types of planes these sky patrolmen should be equipped. Other high-school students of today will become members of school boards and will have to consider enlargements or resurfacing of the school landing field, or the need of employing additional flight instructors.

Thus the educational challenge of the air age has grown complex, insistent, and immediate. Young people require a thorough introduction to the scientific principles which underlie flight. They must also receive a realistic grasp of the unusual political, social, and ethical issues—local, national, and international—which aviation has raised. Furthermore, the problems of the air age are so urgent that schools are finding it necessary to respond promptly and vigorously to take advantage of a rare opportunity to influence, guide, and shape an emerging era.

AVIATION ENTERS THE SCHOOL PROGRAM

As already suggested, aviation is entering the school curriculum in two main forms: (1) In aeronautics courses, as a body of science principles which underlie flight, and (2) As supplementary aviation subject matter in established courses. As an introduction to aviation principles, many secondary schools have added pre-flight aeronautics courses to their curriculums.

Content of a Pre-Flight Aeronautics Course

Aeronautics is a comprehensive field, encompassing numerous specialized areas. As the content for a pre-flight aeronautics course in secondary schools, the following units have proved adequate:

Development of Aircraft

(1) Aircraft history and design—methods of solving flight problems, types of airplanes, general nomenclature, recognition of aircraft.

Aerodynamics

(1) Keeping planes aloft—principles of lift, wing forces, weight and lift, drag and thrust.

(2) Controlling planes in flight—drag and power; propeller force; longitudinal, lateral, and directional stability; control surfaces; highlift.

(3) Planes in flight—factors affecting climb, factors affecting gliding, taking off and taxiing.

Principles of Aircraft Structures

(1) Airplane materials and stresses—materials needed for planes, stresses peculiar to planes, location of stresses.

(2) Structure of airplane parts—design, support, and testing of wings; main types of fuselages; development and operation of landing gears; purpose

and composition of tail structures; joints, nuts, and fuel lines in relation to safety; the nature of plane controls.

Aircraft Engines

(1) Constructional principles—nature of internal combustion, engine types, details of construction.

(2) Operational principles—cooling, lubrication, fueling, carburetion, ignition.

(3) Instruments and propellers—types of instruments and propellers.

Civil Air Regulations

(1) Civil air flight regulations—rules for public airways, weather regulations.

(2) Pilot and plane certification—reasons for pilot certification, qualifications for certification, rating and certification of planes, pilot examinations.

Meteorology

(1) Causes of weather—atmosphere, sun, moisture, clouds, air masses, fronts.

(2) Preparation and distribution of weather forecasts—collection of weather data; making maps, charts, and forecasts.

(3) Meeting weather hazards to flight—storms and ice; problems of landing and taking off.

SUPPLEMENTING REGULAR SCHOOL SUBJECTS WITH AVIATION CONCEPTS

For the present, and probably into the near future, the pre-flight aeronautics course will doubtless constitute the basic aviation course for high-school students. But both in secondary and elementary schools aviation can contribute significantly to numerous other curriculum areas.

Navigation

(1) Charts—location of places, measurements on the earth, type of chart projections, land and water features on charts, cultural features, aeronautical features.

(2) Piloting—planning a contact flight, use of a log in flight, wind in relation to flight planning.

(3) Dead reckoning—instruments, laying out and checking the course, use of the wind triangle, interception of ships or planes, relation of flight distance and fuel supply.

Communications

(1) Meaning of aircraft communication.

(2) International Morse Code—meaning, importance, learning to send and receive.

Basic Textbooks for Use in Pre-Flight Aeronautics Courses

A number of very satisfactory basic texts are available for use in pre-flight aeronautics courses. A number of such books have been analyzed in terms

of the outline given above. The results of this analysis are included in a Civil Aeronautics Administration leaflet entitled *Special Study References in Pre-Flight Aeronautics* which will be sent to any interested teacher.

Fitting Pre-Flight Aeronautics Courses Into the Secondary-School Curriculum

1. *Students*—At present in most schools teaching pre-flight aeronautics courses, they are being offered both to juniors and seniors, and to boys and girls.

2. *Prerequisites*—Aeronautics consists in part of applied physics. Therefore, some schools have set up prerequisites for the course—a year of general physics and two years of mathematics. Other schools have concluded that the mathematics needed in aeronautics can be substantially developed as the course proceeds and have accordingly admitted students more freely. An increasing number of schools have concluded that student interest in aeronautics, combined with willingness and capacity to work, represent the soundest admission basis.

3. *Time allotment*—Most high schools have found that to be adequately treated in the schools, pre-flight aeronautics should be recognized as a regular course and should receive the time allotted to regular one-credit subjects.

BIBLIOGRAPHY ON AVIATION

The following brief bibliography lists books, periodicals, films, maps, and globes suited to the courses in high school. Additional titles will be found in the comprehensive, annotated volume entitled *Bibliography of Aviation Materials* prepared by the Aviation Education Research Group of Teachers College, Columbia University, and published by The Macmillan Co., New York City.

Books:

Air Navigation—Introduction to Earth. New York: McGraw Hill Co. 1943. Part I. 79 pp. \$1.00. Also Part II, *Introduction to Navigation*; Part III, *Dead Reckoning and Lines of Position*; Part IV, *Navigation Instruments*; Part V, *Relative Movements*; Part VI, *Contact Flying*; and Part VII, *Nautical Astronomy and Celestial Navigation*. Each \$1.00. The series of 7 books constitute a full-year high-school course at the 11-or-12 grade level.

Aviation Education Research Group, Teachers College, Columbia University. *Science of Pre-Flight Aeronautics for High Schools*. New York: Macmillan Co. 1943. 868 pp. \$1.32. Teachers' Manual. 1942. 248 pp. 80c.

Aviation Education Research Group, Teachers College, University of Nebraska. *Elements of Pre-Flight Aeronautics for High Schools*. New York: Macmillan Co. 1943. 555 pp. 96c. Teachers' Manual. 1942. 113 pp. 72c.

Brookes, Capt. Bernard. *How to Fly an Airplane*. Chicago: Consolidated Book Publishers. 1943. 224 pp.

Dunn, Marshall, and Morrisett, L. N. *Wings for America*. New York: World Book Co. 1943. 244 pp. \$1.00.

Eddy, Paul. *Applications of High School Science and Mathematics in Aeronautics*. Tallahassee: Florida State Department of Education. 1942. 50 pp. 30c.

Fitzpatrick, F. L., and Stiles, K. A. *The Biology of Flight*. New York: Macmillan Co. 1942. 180 pp. 64c

Hamburg, Merrill, and Tweney, G. H. *American Student Flyer*. New York: Picman Publishing Co. 1942. 635 pp. \$1.50.

Pope, Francis, and Otis, A. S. *Elements of Aeronautics*. Yonkers-on-Hudson: World Book Co. 1941. 660 pp. \$2.00.

Robinson, P. T., and others. *Before You Fly*. New York: Henry Holt and Co. 1943. 560 pp. \$2.00.

Shields, B. A. *Air Pilot Training*. New York: McGraw Hill Co. 1943. 602 pp. \$3.50.

Thompson, W. H., and Aiken, M. L. *1000 Pre-Flight Problems*. New York: Harper & Bros. 1943. 160 pp. 88c.

U. S. Navy, Bureau of Aeronautics, Training Division. *Mathematics for Pilots*. New York: McGraw-Hill Co. 1943. 157 pp. 75c.

Supplementary Books:

Aerial Navigation. Chicago: American Technical Society. 1942. 64 pp. 75c.

Andrews, Philip, ed. *Air News Yearbook*. New York: Duell, Sloan, and Pearce. 1943. 264 pp. \$3.75.

Chatfield, C. H., Taylor, C. F., and Ober, Shatswell. *The Airplane and Its Engine*. New York: McGraw-Hill Co. 1940. 414 pp. \$3.00.

Clark, J. R., and Smith, R. R. *Geometry in Aeronautics*. Yonkers-on-Hudson: World Book Co. 1940. 20 pp. 10c.

Duncan, Richard. *Air Navigation and Meteorology*. Chicago: Goodheart-Willeox. 1941. 297 pp. \$3.00.

Gillmer, T. C., and Nietsch, H. E. *Simplified Theory of Flight*. New York: D. Van Nostrand Co. 1941. 162 pp. \$2.00.

Humphrey, S. W. J. *Ways of the Weather*. Lancaster, Pa.: J. Cattell Press. 1943. 391 pp. \$4.00.

Johnston, S. P. *Horizons Unlimited*. New York: Duell, Sloan, and Pearce. 1941. 354 pp. \$3.75.

Jordanoff, Assen. *Your Wings*. New York: Funk and Wagnalls, Rev. Ed. 1942. 294 pp. \$3.00.

McDonald, E. F. *Youth Must Fly*. New York: Harper and Bros. 1942. 221 pp. \$2.50. A book on gliding and soaring.

Michaelis, Ralph. *From Bird Cage to Battle Plane*. New York: Thomas Y. Crowell Co. 1943. 248 pp.

Moore, L. E. *Elementary Aviation*. Boston: D. C. Heath and Co. 1943. 22 pp. \$1.60.

Ray, E. L., and Washburn, S. L. *Are You Fit To Be a Pilot?* New York: Wilfred Funk Inc. 1941. 61 pp. \$1.75.

Shields, Bert. *Principles of Flight*. New York: McGraw-Hill Co. 1942. 363 pp. \$1.88.

Turner, Roscoe, and Dubuque, J. H. *Win Your Wings*, (two volumes). Chicago: Frederick J. Drake and Co. Rev. Ed. 1943; Vol I, 649 pp. \$3.00; Vol. II, 426 pp. \$3.00.

U. S. Civil Aeronautics Bulletin No. 25. *Meteorology for Pilots*. Haynes, B. G. 2nd ed. Washington, D. C.: Supt. of Documents. 1943. 75c.

U. S. Navy, Bureau of Aeronautics, Training Division. *Aerology for Pilots*. New York: McGraw-Hill Co. 1943. 107 pp. \$1.00.

U. S. Navy, Bureau of Aeronautics, Training Division. *Introduction to Navigation*. New York: McGraw-Hill Co. 1943. 81 pp. \$1.00.

U. S. Navy, Bureau of Aeronautics, Training Division. *Operation of Aircraft Engines*. New York: McGraw-Hill Co. 1943. 206 pp. 90c.

U. S. Navy, Bureau of Aeronautics, Training Division. *Principles of Flying*. New York: McGraw-Hill Co. 1943. 338 pp. \$1.50.

Vetter, E. G. *Visibility Unlimited*. New York: William Morrow and Co. 1942. 346 pp. \$4.00.

Zinn, H. S. *Air Navigation*. New York: Harcourt, Brace & Co. 1943. 324 pp. \$3.00.

Periodicals:

Aero Digest. Aeronautical Digest Pub. Corp., 515 Madison Avenue, New York City. Monthly. \$3.00. Comprehensive, articles of general interest, current news, engineering.

Air News. Air News Pub. Co., 545 Fifth Avenue, New York City. Monthly. \$1.50. Picture magazine of current aviation.

Air Progress. Street and Smith Publications Inc., 79 Seventh Avenue, New York City. Monthly. \$2.50. For non-technical readers.

Air Trails. Street and Smith, 79 Seventh Avenue, New York City. Monthly. \$1.75. For youth interested in model airplanes.

Aviation. The McGraw Hill Pub. Co. 330 W. 42nd St., New York City. Monthly, \$3.00. Digest of governmental activity in aviation.

Canadian Air Cadet. The Air Cadet League of Canada, 122 Wellington St., Ottawa. Monthly. \$1.00. Articles of a general as well as a technical nature, illustrated.

Civil Aeronautics Journal. Superintendent of Documents, Washington, D. C. Monthly. 50c. Digest of governmental activity in aviation.

Contact. The Aviation Press, Inc., Airlines Terminal, 80 E. 42nd St., New York City. Monthly. \$2.00. Contains general as well as technical articles. Gives attention to commercial and government activities as well as to school activities.

Current Aviation. American Education Press, Inc., 400 S. Front St., Columbus, Ohio, and 580 Fifth Avenue, New York City. Weekly during school semester, 70c per student in clubs of 30 or more; 80c per student in clubs of 10 to 29; no orders for fewer than 5 copies. For students of all grades.

Flying and Popular Aviation. Ziff-Davis Pub. Co., 540 N. Michigan Ave., Chicago. Monthly. \$3.00. Articles of general interest for air-minded readers.

Model Airplane News. Jay Pub. Co., Mount Morris, Ill. Monthly. \$2.00. For the young model builder.

Model Aviation. Air Youth Division of the National Aeronautics Association, 1025 Connecticut Ave., N. W., Washington, D. C. \$1.00. For model plane builders.

The Sportsman Pilot. The Sportsman Pilot, Inc., 515 Madison Ave., New York City. Monthly. \$3.00. For private flyers.

Films:

Each of the following films can be used to illustrate the aviation discussions carried on in a number of courses. A more complete film list, as well as a list of distributors, is given on pages 85-139 of *Bibliography of Aviation Education Materials*. The following abbreviations are used to describe these listed: sd—sound film; si—silent film; min—minutes of screening time, e.g. 15 min; 16-mm, 35-mm—16-millimeters; J.H.—Junior High School; S.H.—Senior High School.

Aerodynamics, Air Flow (No. TFI-160), Castle Films, Inc., RCA Building, New York City. sd. 16 min. 16-mm. S. H., Pre-Flight Aeronautics—aerodynamics.

Aerodynamics: A Resistance and Streamlining. Bray Pictures, Corp., 729 Seventh Ave., New York City. 1941. sd. 10 min. 16-mm. J. H. Industrial Arts, Pre-Flight Aeronautics—principles of airplane structures.

Aerodynamics, Forces Acting on an Air Foil (No. TFI-161) Castle Films, Inc., RCA Building, New York City. sd. 15 min. 16-mm. S.H. Pre-Flight Aeronautics—aerodynamics.

Aerodynamics: Lift. Bray Pictures Corp., 729 Seventh Ave., New York City. 1941. sd. 10 min. 16-mm. J.H. S.H. General Science, Physics, Industrial Arts, Pre-Flight Aeronautics—principles of airplane structure.

Aerodynamics: Problems of Flight. Erpi Classroom Films, 1841 Broadway, New York City. 1941. sd. 11 min. 16-mm., 35-mm. J.H. S.H. General Science, Physics, Industrial Arts, Pre-Flight Aeronautics—Aerodynamics, human factors in flight.

Aerodynamics: Properties of Air. Bray Pictures Corp., 729 Seventh Ave., New York City. 1941. sd. 10 min. 16-mm. J.H. S.H. General Science, Physics, Industrial Arts, Pre-Flight Aeronautics—principles of airplane structures.

Aerodynamics: Theory of Flight. Erpi Classroom Films, 1841 Broadway, New York City. 1941. sd. 11 min. 16-mm., 35-mm. J.H. S.H. General Science, Physics, Industrial Arts, Pre-Flight Aeronautics—aerodynamics.

The Airplane Changes the World Map. Erpi Classroom Films, 1841 Broadway, New York City. sd. 15 min. 16-mm., 35-mm. J.H. S.H.—Geography, Social Studies, Pre-Flight Aeronautics—Air Navigation.

Airplane Structures, Pt. I. Structural Units, Materials and Loads for Which Designed (No. TI-211), Castle Films, Inc., RCA Building, New York City. All sound. 16-mm. S.H.

Pt. II. Wing Construction (No. TFI-212) 10 min.

Pt. III. Fuselage Construction, (No. TF-111-213). 8 min.

Pt. IV. Control Surfaces (No. TFI-214). 9 min.

Air Transportation. Behind the Scenes of a Coast to Coast Flight. Pictorial and Teacher's Manual, Society for Visual Education, Inc., 100 E. Ohio St., Chicago. Free.

Clouds. U. S. Dept. of Agriculture, Washington, D. C. 1939. sd. 15 min. 16-mm., 35-mm. J.H. S.H. General Science, Meteorology, Geography, Pre-Flight Aeronautics—meteorology.

Conquest of the Air. Films, Inc., 330 W. 42nd St., New York City. sd. 45 min. 16-mm. J.H. S.H. General Science, Physics, Social Studies, History, Geography, Industrial Arts, Pre-Flight Aeronautics—principles of airplane structures.

Cyclone Combustion. Audio Productions for Wright Aeronautics Corp., Paterson 3, N.J. sd. 25 min. 16-mm. S.H. Physics, Industrial Arts, Pre-Flight Aeronautics—airplane engines.

The Development of Communication. Erpi Classroom Films, 1841 Broadway, New York City. sd. 15 min. 16-mm., 35-mm. J.H. S.H. Social Studies, General Science, Industrial Arts, Pre-Flight Aeronautics Communications.

Electrodynamics. Erpi Classroom Films, 1841 Broadway, New York City. sd. 15 min. 16-mm., 35-mm. S.H. Physics, Industrial Arts, Pre-Flight Aeronautics—communications.

How the Autogiro Works. Pathe News, Inc., 35 W. 45th St., New York City. sd. 12 min. 16-mm. J.H. S.H. Industrial Arts, Pre-Flight Aeronautics—principles of airplane structures.

Methods of Flight. Bray Pictures Corporation, 729 Seventh Ave., New York City. sd. 25 min. 16-mm. J.H. S.H. General Science, Biology.

Principles of Flight. Eastman Kodak Co., 343 State St., Rochester, N. Y. 1940. si. 15 min. 16-mm. J.H. S.H. General Science, Physics, Biology, Industrial Arts, Pre-Flight Aeronautics—aerodynamics.

Radio and Television. Vocational Guidance Films, Inc., 7514 N. Ashland Ave., Chicago. sd. 12 min. 16-mm. J.H. S.H. Occupations, Industrial Arts, Pre-flight Aeronautics—communications.

Safety in the Air. Paramount Pictures, 5451 Marathon St., Hollywood, Calif. sd. 15 min. 16-mm. J.H. S.H. General Science, Social Studies, Pre-Flight Aeronautics—Air Navigation.

Smoke Streams. Franklin Institute of Philadelphia, Philadelphia, Pa. si. 30 min. 16-mm. S.H. Physics, Industrial Arts, Pre-Flight Aeronautics—principles of airplane structures, aerodynamics.

Young America Flies. Warner Brothers, First National Studio, Burbank, Calif. sd. 25 min. 16-mm. J.H. S.H. Occupations, Pre-Flight Aeronautics—human factors in flight.

Maps and Globes:

Amateur Radio Map of the World. New York: Rand McNally and Co. Order from American Radio Relay League, Inc., West Hartford, Conn., 33" x 44". \$1.25.

Butterfly World Map. Chicago: Denoyer-Geppert. Desk outline maps. 11" x 16", 85c per 50; 16" x 22", \$1.75 per 50.

Global Map for the Air Age. New York: C. S. Hammond & Co., 90 Lexington Ave. Heavy ledger paper, \$1.00; Heavy duty board with eyelets, \$1.98. Also see *Hammond's Comparative Wall Atlas* of 16 maps, each 43" x 29", \$12.50. Also *Hammond's Self-Revising World Atlas and Gazetteer*, 1943. 48 pp. 35 cents.

Globe on Universal Globe Stand. New York: Rand McNally and Co. \$21.00.
Gnomic North Polar Projection and Map of the Pacific Area. Cleveland, Ohio: Modern School Products, P. O. Box 2606, Lakewood Station. 38" x 50". Can be marked or written on with crayon and erased.

Great Circle Airways Map. Pole centered projection showing great circle air routes as straight liner. New York: Time, Inc. 1943. Free.

Johnson, W. E. *The Earth* (Manual to accompany the Rand McNally Universal Globe). New York: Rand McNally and Co. 1938. 32 pp. \$1.00.

Metal Project Globe. Chicago: A. J. Nystrom and Co., 16". \$18.00.

Polar Aeronautical Wall Map. Chicago: Denoyer-Geppert. 1943. 44" x 60", \$5.75 to \$8.50.

Polar Aeronautical World. Chicago: A. J. Nystrom and Co. 1942. 64" x 45". \$8.25.

Polar Projection Work Map. New York: Rand McNally and Co. 11" x 11½". 5c each, \$3.00 per 100.

Political Map of the World, on the "Casson Projection." New York: The Universal Map Co.

Renner, G. T., ed. *World Map for the Air Age.* New York: Rand McNally and Co. 1942. 44" square. \$6.00.

NEWS NOTES

THE SCHOOLS AND CURRENT TRENDS—The Indiana State Teachers Association has prepared some excellent statistical material concerning their schools as well as the relation of economic, social, and government trends to the schools. One table shows the per pupil cost has increased very little over a ten-year period (\$81.80 in 1930-31 to \$81.94 in 1941-42). It also shows that total expenditures in 1941-42 for all school purposes (elementary and secondary) was only 94% of what it was in 1930-31 while total expenditures for governmental purposes in 1941-42 was 129% of what it was in 1930-31. Another table shows that the median salary of teachers, principals, and supervisors employed in the public schools of Indiana 1942-43 was \$1,479. This median salary was only nine per cent higher than the median salary for the school year 1930-31. This increase is not nearly adequate to off-set the marked increases that have taken place in living costs since the beginning of World War II. Neither has it been adequate to off-set the high competition offered by industry.

NEW VISUAL AIDS—The Denoyer-Geppert Company of 5235 Ravenswood Avenue, Chicago 40, Illinois, has recently published a new catalog on *New Visual Aids for Wartime Education*. This catalog lists and describes teaching tools for pre-induction and preflight instruction, basic and specialized training programs, and general education in this air age. These aids including maps, globes, and charts, involve the latest and most successful techniques known in teaching and as a result have received wide usage in the secondary schools of the nation.

Secondary-School Attendance This Year

WALTER E. HESS

*Managing Editor, National Association of Secondary-School Principals
Washington, D. C.*

THE EFFECT of the war upon the secondary-school enrollment is quite pronounced this school year. From the beginning of the war, direct and indirect effects began to bear upon the school. With the great spurt in industry arising out of unprecedented demands for war materials and through this an increase in manpower needs resulting in higher wages, older in-school youth become infatuated with the allurements of earning money on their own. Then the Amendment to the Selective Training and Service Act that included youth of 18 and 19 accentuated the trend of high-school youth to leave the school for the Armed Services and for employment.

In order to ascertain how much secondary-school enrollments have been affected by these and other concomitant forces arising out of the war situation, the National Association of Secondary-School Principals through its publication, *THE BULLETIN*, asked schools for certain data (see page 5 of the October, 1943 issue of *THE BULLETIN*) on school statistics as of October 1, 1943.

A study of these data submitted by secondary-school principals in response to this request has been made. From this information received from many secondary schools of the nation, certain tendencies are reflected. In comparing enrollments of October 1, 1943, with those of the same date of the previous year, the data reveal a decrease of slightly more than 5.8 per cent for this year. Using this same figure derived from the same school group, at least an approximation of enrollments for this year can be obtained. The estimated total pupil enrollment in the secondary schools as of October 1, 1943, was 5,785,760. Of this total, 3,077,500 were girls, and 2,708,260 were boys.

A compilation and study of other data submitted in these reports reveal the following tendencies:

1. When the schools opened in October 1943, the need for teachers, as revealed by the number of unfilled positions over the previous year, was 17 per cent greater than in October 1942. Even last year this shortage of teachers arising out of the many effects of the war was apparent but not to as great an extent as in October 1943.

2. When the secondary schools opened in October 1943, the number of teachers new to secondary schools was 18 per cent greater than at the same time in 1942.

3. When the secondary schools opened in October 1943, the number of schools with adequate staffs was 16 per cent less than the year previous.

(Continued on page 79)

Schools Secure Medical and Social History of Registrants for Selective Service System

NECESSITY FOR MEDICAL SURVEY*

SELECTING men for the Armed Forces who are free from mental conditions of a disqualifying nature is a difficult and exacting process for the Armed Forces. In order that a more satisfactory selection may be fulfilled, the Selective Service System has provided this Medical Survey program to furnish the Armed Forces' induction stations with adequate medical, social, and educational histories on each registrant. The Selective Service System and the Armed Forces want to make certain that the greatest possible care is taken, (1) to accept those registrants whose previous medical and social history indicates their ability to adjust themselves under situations of stress, including those who may be termed "borderline" cases; and (2) to reject those registrants whose condition is such as positively indicates physical or mental breakdown, or failure to adjust themselves to the responsibilities of military service after being inducted. Information regarding a registrant's medical and social history as revealed in health, education, employment, and social records is important in properly determining whether a registrant should be accepted or rejected.

As an indication of the importance of this program, it was found in a study made of 2,500 veterans of the present war discharged from the Armed Forces and returned to one state before August 1, 1942, that approximately 40 per cent were discharged because they were suffering from mental and emotional disorders, which has incapacitated them for military duty, while 6.2 per cent suffering from such disorders were so ill that they had to be hospitalized. It is anticipated that approximately 100,000 men will be discharged from the Armed Forces during the calendar year 1943 for nervous and mental reasons.

SCOPE OF MEDICAL SURVEY

Local boards are charged with the responsibility of assembling pertinent information concerning the medical and social history of registrants under the provisions of section 623.33(d), Selective Service Regulations. To implement the information now secured by local boards, a medical survey has been adopted which will be divided into two phases, (1) the securing of additional medical and social histories on registrants classified, or about to be classified, into a class immediately available for service, and (2) the securing of educa-

*This article is part of directives as prepared by Major General Lewis B. Hershey from the national headquarters of the Selective Service System set forth in *Medical Circular No. 4*. The circular is designed to acquaint all persons and agencies addressed with pertinent information concerning the "Medical Survey." "Medical Survey" is used to designate a broad and comprehensive program under which information concerning Selective Service registrants is gathered, primarily for use at the Armed Forces' induction stations. While the program was designed primarily as an aid to the person responsible for the induction or rejection of registrants, it is in a large sense a service to the registrant and to the country as a whole, a fact which fully justifies the enthusiastic response of individuals and organizations whose co-operation and assistance has been solicited.

IDENTITY VERIFICATION

DSS Form 210

Name
(Please Print) (Last) (First) (Middle)
Present Address
|| (Number) (Street) (City) (State)
Birth Age
Soc. Sec. Acct. No.
Single ☐ Married ☐ Wife's Name
(Maiden Name) (First)
Widowed ☐ Divorced ☐ Date Married Place
Father
(Last Name) (First Name) (Address)
Mother
(Maiden Name) (First Name) (Address)

| Previous Addresses for Last 5 Years | Dates in Years | If Single, List Brothers and Sisters If Married, List Children Name Age |
|-------------------------------------|----------------|---|
| | | |
| | | |
| | | |
| | | |
| | | |

Local Board No. County
IDENTITY VERIFICATION (over)

Front

Size 6" x 4"

Name of Family Physician.....

Address of Family Physician.....

(Number) (Street) (City) (State)

☐ Not Identified.

EDUCATIONAL VERIFICATION

DSS Form 211

| | |
|---|--|
| <div style="border: 1px solid black; width: 150px; height: 60px; margin: 0 auto;"></div> <p style="margin: 5px 0;">EDUCATIONAL VERIFICATION</p> | |
| Local Board Date Stamp With Code | |
| Name Order No. | |
| Present address | |
| Birth Age | |
| Father's name | |
| Mother's name | |
| I can <input type="checkbox"/> read the English language. I can read other language <input type="checkbox"/> Specify | |
| I can <input type="checkbox"/> write the English language. I can write other language <input type="checkbox"/> Specify | |
| I have completed years of school. Course of study | |
| Name and address of school last attended | |
| Age at time of leaving school Date of leaving Grade | |
| Reason for leaving school | |
| Signature | |

Size 8" x 5"

tional histories from secondary schools. Seven forms are to be used by local boards and the state directors of Selective Service in securing such information. They are:

- (a) *Identity Verification* (Form 210)
- (b) *Educational Verification* (Form 211)
- (c) *Medical and Social History* (Form 212)
- (d) Envelope for Form 212 (Form 212-A)
- (e) *Co-operative School Report* (Form 213)
- (f) *Special School Report* (Form 214)
- (g) Envelope for Forms 213 or 214 (Form 213-A)

The local board will require an *Identity Verification* (Form 210) and *Education Verification* (Form 211) to be completed by the following registrants: (a) each registrant who hereafter registers, and (b) each registrant who is classified or about to be classified into a class immediately available for Service unless already accomplished under (a).

PROCEDURE TO SECURE MEDICAL AND SOCIAL HISTORIES OF REGISTRANTS

The state director upon receipt of a registrant's *Identity Verification* (Form 210) from the local board will forward it to the state central file for mental diseases, if such agency exists, or to such other agencies in the state, such as state hospitals or private hospitals, where records of commitment or treatment without commitment will be entered on the reverse side of Form 210 and re-

turned to the state director. In states where there is more than one file to check, special planning will be needed to expedite the return of significant information to the local board.

Any information reported on registrant's Form 210 by the various mental institutions of the state shall not preclude the local board forwarding the registrant for induction, unless the information is of such a character as to justify the classification of the registrant in Class IV-F, as having manifestly disqualifying mental defect listed in Form 220.

The information contained in the *Medical and Social History* (Form 212) shall not be used by the local board in classifying a registrant. It is to be used only by the Armed Forces' induction station when forwarded to it in the following manner: the commanding officer of the induction station will deliver these forms to the induction station's senior medical officer. When the registrant's examination has been completed at the induction station, all such forms will be forwarded to the state headquarters for filing or transmitted to the state headquarters of jurisdiction; or if a registrant has been (a) rejected at the induction station, or (b) discharged by the Armed Forces for neuropsychiatric reasons, and subsequently thereto the local board is of the opinion that such rejection or discharge was erroneous, or the causes for such rejection or discharge have ceased to exist, it may refer the registrant to the medical advisory board under the provisions of section 603.31 and section 633.15, Selective Service Regulations.

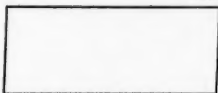
It is recommended that the following be considered as sources from which the medical field agents may seek information to complete the *Medical and Social History* (Form 212): the registrant's personal or private physician, social service exchanges, hospitals and clinics, public or private social agencies of recognized standing, United States Employment Service, the present or former employer of the registrant, public or private schools, and correctional institutions or agencies.

PURPOSE OF FORM 212

The purpose of the Form 212 for *Medical and Social History* is to give the Armed Forces' examining physicians information as to the presence or absence of mental or physical conditions bearing on the registrant's acceptability for service. The local board should prepare Part I of DSS Form 212 from the information contained on *Identity Verification* (Form 210) and *Educational Verification* (Form 211) as soon as these forms are received by the local board. If at the time it prepares Part I of Form 212 the local board has any information indicating that the registrant has a social or health problem or a history of mental illness, these facts should be noted on the margin of Part I of DSS Form 212. Part II will be completed by the medical field agent. Whenever possible, the medical field agent should complete *all* items under Part II.

MEDICAL AND SOCIAL HISTORY*

DSS Form 212



Date.....

Local Board Date Stamp With Code

PART I.

Name..... Order No.....

(Please Print) (Last) (First) (Middle)

Present address

(Number) (Street) (City) (State)

Birth..... Age.....

(Soc. Sec. Acct. No.) (Month, Day, Year) (Place)

Single ☐ Married ☐ Wife's name.....

(Maiden) (First) (Address)

Widowed ☐ Divorced ☐ Date married..... Place.....

Father

(Last name) (First name) (Address)

Mother

(Maiden name) (First name) (Address)

| PREVIOUS ADDRESSES FOR LAST 5 YEARS | DATE IN YEARS | If SINGLE, LIST BROTHERS AND SISTERS. If MARRIED, LIST CHILDREN | |
|-------------------------------------|---------------|---|-----|
| | | Name | Age |
| | | | |
| | | | |
| | | | |

Name and address of school last attended

Age at time of leaving school..... Date of leaving..... Grade.....

Reason for leaving school

PART II.

1. SCHOOL RECORD

Intelligence-test record (if any) I. Q..... Date..... Name of test.....

Yes No

☐ ☐

Dismissed because unteachable.

Yes No

☐ ☐

Persistent truancy.

☐ ☐

Explosive, unruly behavior.

☐ ☐

School performance below mental ability.

2. ADJUSTMENT TO WORK

Yes No

☐ ☐

Poor adjustment to employer.

☐ ☐

Poor adjustment to associates.

☐ ☐

Frequent change of jobs.

☐ ☐Work conditions: Good ☐ Bad ☐☐ ☐

Frequent absence from work because of sickness.

Yes No

☐ ☐

Frequent absence from work without good cause.

☐ ☐

Inadequacy in work.

☐ ☐

Work on level below mental ability.

☐ ☐

Persistent unemployment.

3. HEALTH

Yes No

☐ ☐

Head or spinal injuries (severe).

☐ ☐

Convulsions (fits, epilepsy).

☐ ☐

Encephalitis (sleeping sickness).

☐ ☐

Enuresis (bed wetting) after 12 years of age.

☐ ☐

Somnambulism (sleepwalking).

☐ ☐

Heart disease.

☐ ☐

Tuberculosis.

Yes No

☐ ☐

Diabetes.

☐ ☐

Stomach ulcer.

☐ ☐

Rheumatic fever.

☐ ☐

Asthma.

☐ ☐

Ever confined as chronic invalid.

☐ ☐

Suffering from incurable disease.

☐ ☐

Permanent defect as result of disease or accident.

*The entire back of this form is devoted to space for the entry of information about the following five items: (1) School; (2) Work; (3) Health; (4) Personality or Medical Disorders; and (5) Family.

4. PERSONALITY OR MENTAL DISORDERS

| Yes | No | | Yes | No | |
|--------------------------|--------------------------|-------------------------------------|--------------------------|--------------------------|---|
| <input type="checkbox"/> | <input type="checkbox"/> | Drug or alcohol addiction. | <input type="checkbox"/> | <input type="checkbox"/> | Excessive shyness. |
| <input type="checkbox"/> | <input type="checkbox"/> | Evidence of sexual abnormalities. | <input type="checkbox"/> | <input type="checkbox"/> | Seclusiveness. |
| <input type="checkbox"/> | <input type="checkbox"/> | Arrests for sexual misconduct. | <input type="checkbox"/> | <input type="checkbox"/> | Marked aggressiveness. |
| <input type="checkbox"/> | <input type="checkbox"/> | Extreme cruelty or destructiveness. | <input type="checkbox"/> | <input type="checkbox"/> | Vagrancy. |
| <input type="checkbox"/> | <input type="checkbox"/> | Treatment for mental disorder. | <input type="checkbox"/> | <input type="checkbox"/> | Repeated marital difficulties. |
| <input type="checkbox"/> | <input type="checkbox"/> | Admission to mental institution. | <input type="checkbox"/> | <input type="checkbox"/> | Detrimental personal habits—give details. |
| <input type="checkbox"/> | <input type="checkbox"/> | Chronic anxiety or worry. | <input type="checkbox"/> | <input type="checkbox"/> | Court or prison record. |
| <input type="checkbox"/> | <input type="checkbox"/> | Overdependent on some person. | <input type="checkbox"/> | <input type="checkbox"/> | If "yes" explain |
| <input type="checkbox"/> | <input type="checkbox"/> | Recurrent depression. | | | |

5. HISTORY OF MEMBERS OF FAMILY

| Yes | No | | Yes | No | |
|--------------------------|--------------------------|---|--------------------------|--------------------------|--|
| <input type="checkbox"/> | <input type="checkbox"/> | Commitment of any member of family to mental institution. | <input type="checkbox"/> | <input type="checkbox"/> | Chronic alcoholism. |
| <input type="checkbox"/> | <input type="checkbox"/> | Mental defect. | <input type="checkbox"/> | <input type="checkbox"/> | Drug addiction. |
| <input type="checkbox"/> | <input type="checkbox"/> | Epilepsy. | <input type="checkbox"/> | <input type="checkbox"/> | Severe nervous break-down. |
| <input type="checkbox"/> | <input type="checkbox"/> | Broken home before 13 years of age. | <input type="checkbox"/> | <input type="checkbox"/> | Repeated marital or domestic difficulties. |

(Signature of Medical Field Agent)

(See reverse side for details regarding items checked "Yes")

[over]

Size 8" x 12 1/2"

PROCEDURE TO SECURE EDUCATIONAL HISTORIES

A co-operative school program has been formulated whereby secondary schools will provide educational histories on (1) potential registrants fifteen years of age and over, and (2) registrants classified or about to be classified into a class immediately available for Service. State directors will be furnished with a supply of two forms, (1) a *Co-operative School Report* (Form 213), and (2) a *Special School Report* (Form 214), to be used in securing educational histories.

State directors should secure information from the chief state school officer, the director of parochial schools, and the directors of private schools as to the number of Forms 213 required and transmit such forms to each school, with a sufficient number of franked envelopes for their return when completed. Participating public, parochial, and private secondary schools will, when a student fifteen years and over (1) graduates, or (2) otherwise leaves the school, complete and transmit Form 213 to the state director of the state in which the school is located.

The purpose of *Co-operative School Report* (Form 213) is to give the examining physicians at the Armed Forces' induction stations information concerning a registrant's health and personality characteristics. DSS Form 213 should be completed by at least five faculty members of the co-operating secondary school, independently and without consultation with each other or with the student concerned. It will not be signed. If only one faculty member

is available to complete it, that copy should be completed from the school records and marked "Completed from school records."

All entries on this form are to be completed except the entry opposite the words "Date of Examination" and the entries below the word "Disposition" in the lower half on the left side of the form. The form contains eleven numerical items and shall be completed by making a check mark in the appropriate box for each item. The following instruction and definitions shall apply:

Item 1. *Is his school work getting poorer?* The object of this item is to detect a decrease in the student's learning ability. Check the box opposite the words "Harder studies" or "Other interests." If any of the usual causes of poorer school work are present, such as desire to leave school, outside work, preoccupation with a hobby, home or personal crises, or school work calling for more ability than was previously necessary.

Item 2. *Is he a truant?* Check the box opposite the word "Yes" only if the student's absence from school is frequent and is not the result of ill health or other causes beyond his control.

Item 3. *To what extent does he have difficulty in making up his mind?* All persons to some extent hesitate in making decisions. Check the box opposite the words "Has much difficulty" only if indecisiveness is a marked trait observed many times in simple situations.

Item 4. *Participation in physical activities.* Compare the student with the average.

Item 5. *Response from classmates.* Check the box opposite the word "Disliked" if the student's classmates tend to shun him. Do not base judgment on the results of isolated unpopular actions which are not typical of the student's general behavior.

Item 6. *Attitude toward teachers.* The box opposite the word "Unco-operative" is to be checked only if a student resists efforts to help him or to induce him to live up to the general social behavior of his classmates.

Item 7. *Dependability.* Check the box opposite the word "Unreliable" only if considerable experience indicates that the student's word, honesty, or expressed intentions cannot be relied upon to the extent expected of the average male student.

Item 8. *Check any characteristics which apply.* Habitual, rather than single, instances of behavior should be the basis for judgment in checking the boxes opposite characteristics under this item.

Item 9. *Check any difficulty which this student has experienced.* Check the box opposite the difficulties listed under this heading only if there is personal knowledge or the school records show the difficulty.

Item 10. *To your personal knowledge, has the student ever been referred for any type of nervousness or behavior problem to a physician, a clinic, or an institution?* This item is of great importance. Do not check the box opposite the word "Yes" unless there is personal knowledge of such referral.

Item 11. *If you have further helpful comments on registrant or his background, add it on the other side and check in this square.* Objective and unbiased comments by the teachers are often helpful to the examining physicians at the Armed Forces' induction stations. Favorable comments are just as important as those indicating evidence of difficulty.

CO-OPERATIVE SCHOOL REPORT

DSS Form 213

Name
(Last) (First) (Middle)Place of birth Date of birth
(Place) (County) (State) (Month, Day, Year)Present address
(Place) (County) (State)Father's name
(Last) (First) (Address)

DATA ON REGISTRANT (Impressions of Teachers)

Date of report

(Month) (Year)

NOTE: Check the square that applies in this manner [✓] (Use ink)

(Name of school reporting) 1. Is his school work getting poorer? { No... ☐ Yes... ☐If "yes" do you attribute this to { Harder studies ☐ Other interests ☐ Reduced ability to study ☐(City) (State) 2. Is he a truant? { No... ☐ Yes... ☐SECONDARY SCHOOLS
SELECTIVE SERVICE
SYSTEM
CO-OPERATIVE SCHOOL
REPORT3. To what extent does he { None ☐ have difficulty in making ☐ up his mind ☐ Moderately ☐ Has much difficulty ☐4. Participation in physical activities { Much ☐ Average ☐ None ☐5. Response from classmates { Accepted ☐ Ignored ☐ Disliked ☐FOR USE BY EXAMINERS AT
ARMED FORCES INDUCTION
STATION6. Attitude toward teachers. { Very cooperative ☐ Usually cooperative ☐ Uncooperative ☐Date of examination 7. Dependability { Always reliable ☐ Usually reliable ☐ Unreliable ☐

DISPOSITION

Accepted ☐ Rejected ☐

If rejected by psychiatrist—

Diagnosis:

8. Check any characteristics which apply:
1. Seclusive ☐
2. Moody ☐
3. Suspicious ☐
4. Effeminate ☐
5. Deceptive ☐
6. Markedly nervous ☐
7. Temper tantrums ☐
8. Strikingly immature ☐
9. A "show-off" ☐
10. A "day dreamer" ☐
11. "Peculiar" ☐

9. Check any difficulty which this pupil has experienced:

1. Asthma or hay fever ☐
2. Tics or twitches ☐
3. Heart trouble ☐
4. Severe stomach or bowel trouble ☐
5. Fainting ☐
6. Fits or convulsions ☐
7. Chronic ill health ☐10. To your knowledge, has this boy ever been referred for any type of nervousness or behavior problem to a physician, a clinic or an institution? { No... ☐ Yes... ☐

If so give name

11. If you have further helpful comments on registrant or his background, add it on other side and check in this square ☐

Upon completion of all DSS Forms 213 for any one male student, these forms will be fastened together in such manner that the right-hand column of check marks on each form is visible. When the forms have been fastened together, they will be placed in a penalty envelope and mailed to the state director of Selective Service.

Form 214 is to be used by the state director in securing educational histories in those cases where Form 213 has not been completed. When Form 213 or 214 is received by state headquarters from the co-operating secondary schools, it will be filed at state headquarters.

When an *Education Verification* (Form 211) is received by the state director, the files at state headquarters shall be checked to determine if there is a *Co-operative School Report* (Form 213) for the registrant. If a Form 213 is on file at state headquarters, it shall be forwarded to the local board in a sealed envelope (Form 213-A), with the registrant's name, address, and order numbers and addressed to the medical examiner at the Armed Forces' induction station. If a Form 213 is not on file at state headquarters, a *Special School Report* (Form 214) should be forwarded to the school the registrant last attended, requesting that it be completed and returned to the state headquarters. If the school the registrant last attended is in another state, a Form 214 should be transmitted to the state director of the state where such school is located, requesting him to secure completion of it. When it has been completed and returned to the state director, it shall be forwarded to the local board in the same manner as Form 213.

PROCEDURE WHEN REGISTRANT IS TRANSFERRED FOR DELIVERY
OR FORWARDED FOR INDUCTION

When a registrant is transferred from one local board to another for delivery, Forms 210, 211, 212, and 213 or 214, if available, will be forwarded to the local board of transfer for transmittal to the induction station. When a registrant is forwarded for induction, the local board will forward these forms, if available, to the induction station. The induction of a registrant or any other action with reference to his case shall not be delayed pending the completion and return to the local board of any one or all of these forms. Those forms received by the local board will be sent to the induction station.

SPECIAL SCHOOL REPORT

DSS Form 214

To: Date.....

From: STATE DIRECTOR OF SELECTIVE SERVICE

Local Board.....

Name Order No.....

(Last) (First) (Middle)

Present address (Place) (County) (State)

Birth Age.....
(Soc. Sec. Acct. number) (Month, Day, Year) (Place)

Father's name (Last) (First) (Address)

Mother's name (Maiden) (First) (Address)

The above-named registrant states that he completed.....years of school; that he attended the.....

(Name of school) (Address)

and that he left school on or about.....while he was in.....grade,

(Date)

for the following reason:

It is requested that DSS Form 213, Cooperative School Report, be furnished this office if available, or if not available, that the following information be furnished:

Registrant's statement as to grade and reason for leaving: { Correct ☐
No record ☐
Incorrect ☐

While attending the school:

The quality of his work was..... { Good ☐
Fair ☐
Very poor ☐He was a truant..... { Never ☐
Occasionally ☐
Habitually ☐He participated in physical activities..... { Much ☐
Average ☐
None ☐By his classmates he was..... { Accepted ☐
Ignored ☐
Disliked ☐His attitude toward teachers..... { Very cooperative ☐
Usually cooperative ☐
Uncooperative ☐As to dependability he was..... { Always reliable ☐
Usually reliable ☐
Unreliable ☐

SECONDARY SCHOOLS
SELECTIVE SERVICE
SYSTEM
SPECIAL SCHOOL REPORT
FOR USE BY EXAM-
INERS AT ARMED
FORCES INDUCTION
STATION

Characteristics

Difficulties Experienced

If not possible to complete the above due to absence of teachers who have knowledge of his work, please give abstract of official record.

DSS Form 214

Size 8" x 10 1/4"

Improving Mathematical Abilities of Pre-Induction Groups

LEO J. BRUECKNER

Professor of Education, University of Minnesota

PART I

A SURVEY OF ARITHMETIC ABILITIES

IN THE FIRST six months of 1943 an arithmetic test was given to large numbers of high-school students, chiefly seniors, to make possible an estimate of the validity of current criticisms by the staff of our Armed Forces of instruction in mathematics in our schools, especially arithmetic. To get comparable data the test was also given to selected groups of college students and to pre-flight and engineering students at the University of Minnesota.

The test used consisted of two examples in each of the four processes with whole numbers, fractions, and decimals, and in each of the three cases of percentage, in all thirty examples. Each part of the test was timed, a total of sixteen minutes being allowed for the entire test. A copy of the test is given at the end of Part II.

The test was made available to schools in all parts of the country. By June 1943, reports had been received from high schools in 90 different cities and smaller communities in thirty states. In these places the test was administered and scored by members of the local staffs. Distributions of scores were sent to the University of Minnesota where they were consolidated.

Table I gives a distribution of the median scores for 90 senior high schools from which reports were received.

TABLE I. DISTRIBUTION OF ARITHMETIC SCORES FOR TWELFTH GRADE CLASSES IN HIGH SCHOOLS IN ALL PARTS OF THE COUNTRY

(Highest Possible Score—30)

| <i>No. Correct</i> | <i>Frequency</i> |
|--------------------|------------------|
| 30 | 0 |
| 28-29 | 0 |
| 26-27 | 0 |
| 24-25 | 3 |
| 22-23 | 8 |
| 20-21 | 12 |
| 18-19 | 13 |
| 16-17 | 27 |
| 14-15 | 19 |
| 12-13 | 5 |
| 10-11 | 2 |
| 8-9 | 1 |
| 6-7 | 0 |
| 4-5 | 0 |
| 2-3 | 0 |
| 0-1 | 0 |
| Number | 90 |
| Median | 17.3 |

The range in scores was from one school with a class median of 8 examples correct to another school with a class median of 25 examples correct. The median for all groups was 17.3 examples correct, or 57.7 per cent of the examples in the test correct. This is a low level of accuracy. When the fact that half of the classes had a median per cent of accuracy of less than 58 is taken into consideration, it is evident that there is a considerable degree of validity of the criticisms of our Armed Forces of the status of the arithmetic ability of inducted groups, in so far as high-school seniors are concerned. Undoubtedly results for the same test if given to individuals who have been out of school for some time would be even lower than they were for high schools.

Table II gives comparable data for high-school seniors and three selected groups of college students.

TABLE II. AVERAGE SCORES ON ARITHMETIC TEST BY
SELECTED GROUPS OF INDIVIDUALS

| <i>Group</i> | <i>N</i> | <i>Median</i> | <i>Range</i> |
|---------------------------------|------------|---------------|--------------|
| All high schools | 90 places | 17.3 | 8 to 25 |
| Seniors of College of Education | 89 places | 18.8 | 5 to 29 |
| Pre-flight, Minnesota | 96 places | 19.4 | 4 to 29 |
| Army engineers, Minnesota | 107 places | 25.6 | 14 to 30 |

The median scores of large groups of seniors in the College of Education at the University of Minnesota are approximately the same as for high-school seniors, and the median score for pre-flight groups is somewhat higher than for high-school seniors. The median score for army engineers was considerable higher than the medians for all of the other groups, being 25.6 items correct or 85.3 per cent correct as compared to approximately 18 correct or 60 per cent correct for the other groups. This level of accuracy for the engineers, 85 per cent, seems to be a reasonable standard that might be established for pre-induction groups. In all groups there was a very wide range of scores among individuals.

In a number of school systems the arithmetic test was given to all high-school pupils in grades 9, 10, 11, and 12. In Table III are given the results for seven places in which the number of cases involved is large enough to make the results reliable.

The data for Table III shows that there is not a consistent trend among all of the schools. In general it can be said that there are very small differences in the scores from grade to grade in places A, C, F, and G, while in places B, D, and E there is a gradual but small increase in scores from grade to grade. In two places, A and G, the scores for the seniors were slightly below those for the ninth graders, while in the other five places the reverse was true. In general it appears that the level of the arithmetic ability of twelfth-grade

TABLE III. RESULTS FOR GRADES 9 TO 12 IN SIX SCHOOL SYSTEMS IN VARIOUS PARTS OF THE COUNTRY

| Location | Grade | | | |
|------------------|-------|------|------|------|
| | 9 | 10 | 11 | 12 |
| Mississippi (A) | 14.5 | 14.5 | 14.0 | 12.0 |
| Colorado (B) | 12.3 | 14.1 | 16.2 | 17.0 |
| Pennsylvania (C) | 15.2 | 16.6 | 16.8 | 17.0 |
| Washington (D) | 11.3 | 12.2 | 13.9 | 15.8 |
| New York (E) | 15.0 | 17.0 | 18.0 | 18.0 |
| Iowa (F) | 18.0 | 17.0 | 17.0 | 19.0 |
| Kansas (G) | 15.2 | 15.9 | 13.2 | 14.8 |

students is somewhat higher than for ninth graders and there is a general tendency for scores to increase from grade to grade. In all grades the level is considerably below the 85 per cent point, suggested as a standard for pre-induction courses.

The finding that there is no evidence of a loss in arithmetic ability from grade to grade may be due in part to the fact that some of those of lower capacity have been eliminated by the eleventh or twelfth grade. In general, it is also true that only a small fraction of eleventh- and twelfth-grade pupils take courses in mathematics; hence there is on the whole little done in high schools to raise the level of ability in arithmetic. In many cases there is undoubtedly a loss in ability due to disuse. The fact that there appears to be in general a small increase in ability is significant, although the general level of accuracy is quite low.

The question now arises: what can be done by our high schools to raise to a desirable standard, say 85 per cent, the level of arithmetic ability of the boys and girls who are about to be inducted into the Armed Forces? What kind of program should be provided? How should it be organized? How long should it be?

PART II

IMPROVING ARITHMETICAL ABILITIES OF SENIORS

In order to investigate the possibility of improving the arithmetic ability of high-school seniors, the co-operation of Humboldt and Harding High Schools of St. Paul, Minnesota, was secured. In the Humboldt School an experiment with a single class was conducted with prepared materials to find the amount of improvement resulting from four periods of intensive practice. Subsequently in the Harding School the entire senior class was put through the same kind of program.

A. Results of Arithmetic Testing Program in the Humboldt High School

On Wednesday morning, March 10, 1943, the senior class of Humboldt High School, St. Paul, was given the 16-minute thirty item test, Test A, in arithmetic previously described. A week later these pupils were given a

similar 25-minute test in arithmetic, Test B, equivalent in length and content to the first test, to determine the improvement in accuracy, if any, that would result if the pupils were given approximately as much time as they could use to reasonable advantage to perform and check the computations required. In Test A each part of the test was timed, while in Test B the separate parts were not timed.

Table IV gives the summary results for Humboldt boys and girls and for boys and girls combined for both Test A and Test B. The data are for 174 seniors who were present for both tests.

On both Tests A and B the boys made slightly higher mean scores than were made by the girls. The mean score for both groups combined was 12.5 examples correct out of the 30 examples in the test, or 41.7 per cent accuracy.

TABLE IV. MEAN SCORES OF ALL PUPILS PRESENT
ON THE FIRST TWO TESTS

| | Boys | Girls | Total | Per Cent of Accuracy |
|-------------------|---------|---------|---------|----------------------|
| Test A—16 minutes | 13.4 | 11.9 | 12.5 | 41.7 |
| Range of scores | 1 to 29 | 0 to 25 | 0 to 29 | 0 to 97 |
| Test B—25 minutes | 20.3 | 19.2 | 19.6 | 65.3 |
| Range of scores | 5 to 30 | 5 to 30 | 5 to 30 | 17 to 100 |
| N* | 65 | 109 | 174 | |

*Present for both tests.

These results are considerably lower than the country-wide median of 57.7 per cent for Test A. The range in individual scores was very wide at Humboldt, from 0 to 29 examples correct.

On Test B, the test with very liberal time limits, the scores were considerably higher. The scores for boys again surpassed the scores for the girls. The mean score for all pupils was 19.6 examples correct or 65.3 per cent accuracy as compared with 41.7 per cent accuracy on Test A. These low per cents of accuracy on Test B show that even when these pupils were given practically as much time as they could use to advantage they still were not able to perform the computations with a degree of accuracy that can be regarded as at all satisfactory. Some of the improvement in scores on Test B over Test A undoubtedly was due to the informal discussion by the students of the first test. There was no planned preparation whatsoever for Test B which was administered without any warning. It may therefore be concluded that regardless of the time allowed on the tests the level of accuracy in computation was very low.

To determine the relations between the number of courses in mathematics taken by the students and their performances on both tests, the papers were divided into groups on the basis of the number of courses taken. Means

for each group were computed. The results for boys and for girls and for the total group are given in Table V for both Test A and Test B.

The results for Test A show that there is very little difference in the scores for the first three groups, those with two or less courses in mathematics, for either the boys or the girls, or for boys and girls combined. In each case

TABLE V. RELATION OF AMOUNT OF MATHEMATICS TAKEN
AND MEAN TEST SCORE

| | <i>Boys</i> | | <i>Girls</i> | | <i>Total</i> | <i>Per Cent of Accuracy</i> |
|--------------------------|---------------|----------|---------------|----------|--------------|-----------------------------|
| | <i>Scores</i> | <i>N</i> | <i>Scores</i> | <i>N</i> | | |
| <i>Test A—16 minutes</i> | | | | | | |
| 1. No courses | 11.5 | (14) | 10.9 | (43) | 11.0 | 36.7 |
| 2. One course | 11.1 | (14) | 11.5 | (20) | 11.3 | 37.7 |
| 3. Two courses | 11.3 | (18) | 11.8 | (34) | 11.7 | 39.3 |
| 4. Three or more courses | 18.6 | (19) | 16.8 | (12) | 17.9 | 59.7 |
| All | 13.4 | (65) | 11.9 | (109) | 12.5 | 41.7 |
| <i>Test B—25 minutes</i> | | | | | | |
| 1. No courses | 18.4 | | 16.1 | | 16.7 | 55.7 |
| 2. One course | 17.1 | | 19.5 | | 18.5 | 61.7 |
| 3. Two courses | 19.3 | | 20.5 | | 20.1 | 67.0 |
| 4. Three or more courses | 24.9 | | 25.7 | | 25.2 | 84.0 |
| All | 20.3 | | 19.2 | | 19.6 | 65.3 |

the mean was approximately 11 examples correct, or slightly less than 40 per cent accuracy. For the fourth group, those who have had three or more courses in mathematics, the results were considerably higher, approximately 60 per cent accuracy. Evidently a selective factor is operating here. This performance however is at a much lower level than had been expected of this fourth group, indicating that even in their case some sort of review program in arithmetic is undoubtedly necessary.

The results for Test B indicate a much closer and more direct relationship between the results of the test and the number of courses in mathematics taken for both boys and girls. The high level of accuracy achieved by those who have had three or more courses of mathematics indicates that these pupils either can work more accurately when there is no time pressure, or that following Test A they did considerable independent review work to build up weak spots revealed to them by the first test. It is known that a number of them realized their deficiencies, especially in percentage, and that the methods of solving examples in this case were discussed and similar examples solved following the test. This suggests that for these pupils a short period of systematic review would undoubtedly raise both their speed and general ability in arithmetic to levels considerably above the 84 per cent level of accuracy they did achieve on Test B.

It may be concluded from the results for Tests A and B that almost all students, regardless of the amount of mathematics they have taken, need

a "refresher" course of some kind if they are to have, on graduation, a desirable level of proficiency in the fundamental operations with whole numbers, fractions, and decimals, and in procedures involved with per cents. Furthermore, both boys and girls require this review work. It should be pointed out that many of the boys will enter the Armed Forces, and large numbers of the girls, industry, auxiliary forces, and the like. In all of these areas reasonable speed and accuracy of computation are essential.

Results for a Group Given Intensive Practice

In order to investigate the possibility of improving student performance in arithmetic and also the rate at which this improvement will take place under a planned program of review, the 32 pupils in a senior class in the social studies in Humboldt High School were given a short period of intensive directed practice. For an interval of four days the second half of the regular class period in the social studies, approximately 30 minutes each day, was devoted to directed review of arithmetic principles and then practice with prepared materials. On the first of the four days the time was devoted to work with whole numbers, on the second day to fractions, on the third day to decimals, and on the fourth day to per cent. A mathematics teacher was present each day to give any assistance the students might request and to direct the brief review of the major principals involved in the processes being practiced. Then the pupils worked a carefully selected series of examples which covered all of the major types of procedure, ranging from simple to complex, in the one phase of the four processes being reviewed on the particular day. The students evidenced unusual interest in this work.

To get a measure of the resulting progress, Test A which had been given a week before the practice was begun was repeated on the day following the fourth period of practice. Table VI gives the results for the pre-test

TABLE VI. MEAN RESULTS ON PRE- AND POST-TESTS FOR SPECIAL GROUP

| | <i>Number Correct</i> | <i>Per Cent of Accuracy</i> |
|------------------------------|---------------------------|---------------------------------|
| 1. Score prior to practice | 11.8 | 39.4 |
| Range of scores | 4 to 22 | |
| 2. Score following practice | 20.1 | 67.0 |
| Range of scores | 10 to 28 | |
| 3. Gain | 8.3 | 27.6 |
| Mean score on 25-minute test | 19.0 | 63.5 |

Note: The above results are for 22 pupils who were present for the three tests. There were 26 pupils present for the two trials of Test A, prior to and following the special practice period. Four were not present for the 25-minute test. The scores for these 26 pupils which also include the 22 pupils for whom the data are given above are as follows:

| | <i>Number Correct</i> | <i>Per Cent of Accuracy</i> |
|-----------------------------|---------------------------|---------------------------------|
| Prior to four-period drill | 11.1 | 37.0 |
| Following four-period drill | 18.0 | 64.0 |
| Gain | 7.8 | 26.0 |

and for the post-test for the 22 pupils in the class of 32 pupils who were present for Test A, Test B, and the second trial of Test A. Below the table are also given the results for 26 of the 32 pupils who were present for both trials of Test A but missed Test B. The other six pupils missed either or both the pre-test and post-test.

On the pre-test the 22 pupils had a mean score of 11.8 examples correct, or 39.4 per cent, approximately the same as for the entire group of seniors. After four days of systematic practice the score was raised to 20.1 examples correct, or 67.0 per cent accuracy. The gain in number of examples correct was 8.3 examples and in accuracy, 27.6 per cent. The time limits in both pre-test and post-test were the same, and the test content was identical. The score of the same group on Test B which was a 25-minute test taken a week after the pre-test, Test A, was 19.0 examples correct or 63.5 per cent accuracy. Both figures are lower than corresponding results for the post-test. It is thus evident that the four short periods of practice not only greatly increased the number of examples solved correctly but also the speed with which the students were able to do the work. On the 16-minute post-test they were able to work more examples correctly than they were able to work correctly in the 25 minutes allowed for Test B.

It should be pointed out, however, that the level of accuracy on the post-test was still very low, *i.e.*, 67 per cent, indicating the need of more practice before a satisfactory level of performance would be achieved. The general trend of the results for the group of 26 students present in both trials of Test A is quite similar to that for the 22 students present for all three tests.

The results for the individual pupils show that there was a wide variation in the improvement made, indicating the need for considering fully the needs of each student in planning a "refresher" program. Undoubtedly a diagnostic testing program keyed to suitable self-teaching aids explaining each process and suitable practice exercises would be an ideal arrangement for individualizing the "refresher" program. The term "refresher" here is used advisedly, since it is evident that the skills the pupils once undoubtedly possessed, say at the end of the eighth grade, but that were evidently reduced or lost through disuse and lack of practice, can very quickly be raised to a satisfactory level by well directed practice.

It may be concluded that rapid improvement in arithmetic skill will result from even a short program of well planned systematic review work, such as four half-hour periods in all. The length of time required will undoubtedly vary with the individual as will the amount of special practice on the different processes he may need.

B. Results of Arithmetic Testing Program in the Harding High School

At Harding High School all seniors assembled in a large lunchroom for the four half-hour periods of practice. The room had long tables and chairs,

and movable blackboards were brought in. The head of the mathematics department each day discussed briefly the major principles underlying operations in the process being reviewed that day. The same practice sheets of examples used with the class at Humboldt were used here also. Several teachers were on hand who assisted during the period of drill any pupils who were in need of help on any point. Although the group was large, the order was good and the task was attacked eagerly by the students.

TABLE VII. SUMMARY OF HARDING RESULTS OF ARITHMETIC REFRESHER PROGRAM
(209 cases)

| | <i>Pre- test</i> | <i>Post- test</i> | <i>Gain</i> |
|----------------------|--------------------------------|--------------------------------|-------------|
| Mean score | 14.01 | 19.30 | 6.29 |
| Per cent of accuracy | 46.7 | 64.3 | 17.6 |
| Range of scores | 2 to 26 | 6 to 30 | |
| Standard deviations | 5.66 examples 18.9 per cent | 5.31 examples 17.7 per cent | |

On the pre-test the mean score of the Harding group was 14.01 examples correct, or 46.7 per cent correct of the 30 examples included in the test. This result is somewhat higher than for Humboldt High School but is considerably below the median for the country as a whole, 17.3 examples correct, or 57.8 per cent. After the four-day period of practice the mean score was 19.30 examples correct, or 64.3 per cent, a gain of 5.29 examples correct, or 17.6 per cent gain in accuracy. This gain was smaller than that made by the small group at Humboldt High School under similar conditions. On both tests the range of scores was very great, 2 to 28 examples correct on the pre-test, and 6 to 30 examples correct on the post-test. On each test the standard deviation was approximately the same, about 5 examples, indicating a considerable range in the middle 68 per cent of the group. It is thus clear that the four short half-hour periods did result in a considerable gain in accuracy, but that more practice is needed to raise the performance of the students to a satisfactory level of accuracy, say 85 per cent as a minimum.

The relation between scores on both tests and the number of courses in mathematics taken by the seniors is shown in Table VIII. Data are given for both boys and girls and for the whole group in each of the four categories.

In each group the mean score for boys was higher than for girls on the pre-test. The results on the post-test were similar to those on the pre-test, except in the group that had taken no courses in which case the scores for boys and girls were the same.

There is an increase in the scores according to the number of courses taken. On the first test those with no courses had a mean of 11.2 examples

correct, while those with three or more courses had a mean of 18.0 examples correct. A similar relation exists for the scores on the second test. On the post-

TABLE VIII. RELATION OF MEAN SCORES TO NUMBER OF COURSES TAKEN IN MATHEMATICS FOR BOYS AND GIRLS

| | <i>Pretest</i> | | | <i>Post-test</i> | | | <i>Gains</i> | | |
|---------------|----------------|----------|----------|------------------|----------|----------|--------------|----------|----------|
| | <i>B</i> | <i>G</i> | <i>T</i> | <i>B</i> | <i>G</i> | <i>T</i> | <i>B</i> | <i>G</i> | <i>T</i> |
| No courses | 13.3 | 10.8 | 11.2 | 17.2 | 17.2 | 17.2 | 3.9 | 6.4 | 6.0 |
| One course | 14.6 | 13.6 | 13.9 | 18.6 | 18.0 | 18.2 | 4.0 | 4.4 | 4.3 |
| Two courses | 17.2 | 13.5 | 15.0 | 21.8 | 19.3 | 20.3 | 4.6 | 5.8 | 5.3 |
| Three or more | 16.5 | 17.8 | 18.0 | 23.0 | 22.4 | 22.9 | 5.5 | 4.6 | 4.9 |
| Total | 17.2 | 12.5 | 14.0 | 22.4 | 19.1 | 19.4 | 5.2 | 6.6 | 5.4 |

test the average after the review program for those who had had three or more courses was 22.9 examples correct, or 76.3 per cent, a fairly satisfactory level of performance, but one that should be considerably higher to insure efficiency in computation where accuracy is very necessary. The level of accuracy was still quite low for those who had had no mathematics courses in high school, the per cent of accuracy being only 57.3 for this group.

It is thus clear that regardless of the number of mathematics courses taken, practically all seniors should be given a systematic review of arithmetic processes prior to graduation, since most of the boys will enter the Armed Services and a large number of the girls will secure work in commercial and industrial establishments. The marked increase in accuracy due to the four-day period of practice indicates that these pupils can rather quickly regain the skills they at one time undoubtedly possessed but have forgotten due to the fact that they have had no mathematics for some time.

The term "refresher course" is probably a good one to express the purpose of a review program for seniors for improvement of arithmetic skills. The program should be systematic. The work should be individualized in terms of the needs of each student. Suitable prepared materials based on the principles of diagnostic testing and keyed remedial practice geared to these tests undoubtedly offer an almost ideal solution to this problem. Those pupils who need a small amount of review work can quickly complete reasonable requirements; others who have more deficiencies as revealed by diagnostic tests will require more time to meet acceptable standards. There is little doubt that a month's program would pay big dividends.

CONCLUSION

The conclusions that can be drawn from the data presented in Parts I and II can be summarized as follows:

1. In general the level of arithmetic ability of high-school seniors is considerably below desirable standards.

- In general there appears to be a small increase grade by grade from grade 9 to grade 12 in the level of arithmetic ability, as measured by the test used in this investigation.
- There are wide variations in arithmetic ability of individuals in all of the groups tested, including high-school pupils, College of Education seniors, pre-flight students, and army engineering students.
- A short, intensive, systematic, well-organized review program produces marked growth in arithmetic ability. It is estimated that on the aver-

A TEST IN ARITHMETIC PROCESSES: TEST A.

Name Place Grade Age

Math. Taken: Algebra Plane Geometry Higher Algebra Solid Geometry

Trig.....

This test will help you discover the arithmetic processes that you need to review. Work carefully and try to have every example right. If you cannot complete the whole row of examples in the time given, you need to work for speed.

| Whole Numbers | | Fractions | | Decimals | |
|------------------------------|-----------|---------------|-----------------|-----------|------------|
| I. Addition (3 min.) | | | | | |
| a | b | c | d | e | f |
| 9000 | \$ 8.95 | 3 3/4 | 8 5/6 | 387.4 | 38.64 |
| 305 | 49.77 | 7 1/2 | 5 7/8 | 65.8 | 9.7 |
| 90 | 677.38 | 3 7/8 | 2 2/3 | 1.9 | 865.492 |
| 600 | 5.28 | | | 2768.4 | 27.4 |
| 5 | 99.37 | | | | |
| II. Subtraction (2 min.) | | | | | |
| 654,113 | \$7908.05 | 27 1/2 | 15 2/3 | 97.482 | 80.456 |
| 627,258 | 2247.89 | —18 3/4 | — 6 7/8 | —26.894 | — 9.73 |
| III. Multiplication (3 min.) | | | | | |
| 709 | \$649.08 | 17 3/4 | 1 3/4 × 3 1/3 = | 3.6905 | 4.83 |
| × 98 | × 706 | × 8 | | × 94 | × 8.6 |
| IV. Division (4 min.) | | | | | |
| 25/10,210 | 17/15,198 | 4 1/2 ÷ 3/4 = | | .48/153.6 | 8.3/318.99 |
| | | 6 1/4 ÷ 5 = | | | |

Percentage (4 minutes)

| Case I | Case II | Case III |
|-----------------|-----------------|-------------------|
| 1. 6% of 185= | 16=.....% of 48 | 18=4% of |
| 2. 120% of 480= | 75=.....% of 60 | 120=150% of |

age a period of not longer than half hour a day for four weeks will suffice for the great majority of high-school and college students.

5. To provide for individual differences in needs, extensive use should be made of diagnostic tests to locate weaknesses and of self-instructive study helps and practice exercises, keyed to the diagnostic tests, to eliminate these weaknesses. This procedure guarantees the best kind of motivation and economy of time allotted for the upbuilding of weak spots.

PART III

ALGEBRAIC ABILITIES OF HIGH-SCHOOL STUDENTS AND GROUPS OF PRE-FLIGHT STUDENTS

In the spring of 1943 a test in essentials of algebra was given to available groups of high-school students in the vicinity of Minneapolis and to groups of pre-flight students at the University of Minnesota who were beginning their course of training. The test, a copy of which is attached, at the end of Part III, was based on the report of the committee appointed by the United States Office of Education to set up the essential contents of pre-induction courses in algebra. Their recommendations were based on an analysis of the algebra needs in 50 manuals used by our Armed Forces. An inspection of these requirements as listed in the report published in the March 1943 issue of *The Mathematics Teacher*, indicates that they are much more limited in scope than the contents of the typical ninth-grade course in algebra. The test was divided into seven parts, taken consecutively, as follows:

- A. Solving simple linear and monomial quadratic equations
- B. Solving formulas for literal values
- C. Evaluating formulas numerically
- D. Operations with signed numbers
- E. Solution of fractional equations
- F. Computing with algebraic fractions
- G. Simultaneous equations

There were 24 examples in all, with 29 items that could be scored as correct or incorrect. The score of each individual was expressed as the number of items correct. An analysis of the scores on each part of the test is of diagnostic value. The time allowed was 35 minutes.

This test was given to pupils in North High School, Minneapolis, Minnesota, and in high schools in two suburbs, St. Louis Park and Robbinsdale. The classes tested included ninth- and tenth-grade classes completing algebra I, all seniors in Robbinsdale, and selected groups of eleventh- and twelfth-grade pupils in North High and St. Louis Park. The test was also given to two pre-flight groups enrolled in mathematics classes at the University of Minnesota. In Table IX are given the median results for the various groups tested.

TABLE IX. RESULTS OF TEST IN ESSENTIALS OF ALGEBRA

| | <i>Grades</i> | | |
|---|--------------------|-------------------|--|
| | <i>9th or 10th</i> | <i>11th</i> | <i>12th</i> |
| I. High schools | | | |
| A. North (Minneapolis) | 22.2 (92 cases) | 25.0 ¹ | 12.5 ² 13.0 ³ |
| B. Robbinsdale All Seniors | | 5.7 | (148 cases) |
| C. St. Louis Park Algebra I classes | 16.0 (84 cases) | | |
| Group of seniors taking advanced algebra | | 25.5 | (31 cases) |
| II. Pre-Flight Cadets—University of Minnesota | | | |
| Group A (96 cases) | 21.3 | (Range: 2 - 29) | |
| Group B (96 cases) | 18.0 | (Range: 5 - 29) | |

¹ Classes in advanced algebra² A group of refresher math seniors³ A group of refresher math seniors

Ninth-grade pupils completing algebra I in North High made considerably higher scores on the test than were made by an unselected group of high-school seniors in that school, practically all of whom had had at least one year of mathematics. The relatively low performance of large groups of unselected seniors is shown by the results for Robbinsdale where the median was only 5.7 answers correct out of the 29 possible. If the results for the other schools are typical, evidently the Robbinsdale seniors had had a big loss in algebraic ability due undoubtedly to disuse. Students enrolled in advanced algebra classes made very high median scores, considerably above the medians for ninth-grade classes and groups of pre-flight students. In all groups the range of individual scores was very large, in the case of the pre-flight groups ranging from 2 to 29 answers correct. These last groups consisted of students all of whom had had at least one year of mathematics, some of them three years, many of them as advanced work as calculus. It is evident, however, that many of them need the comprehensive review provided in the Army course in mathematics. On the other hand there are many for whom this review is superfluous.

TABLE X. RESULTS FOR BOYS AND GIRLS ON ALGEBRA TEST

| | <i>Grade 9</i> | | <i>Grade 12</i> | |
|----------------|----------------|--------------|-----------------|--------------|
| | <i>Boys</i> | <i>Girls</i> | <i>Boys</i> | <i>Girls</i> |
| Robbinsdale | | | 8.0 | 5.0 |
| St. Louis Park | 14.8 | 18.2 | | |
| North High | 19.0 | 23.6 | | |

In Table X are shown the results for boys and girls, not including the selected classes taking advanced algebra.

In grade 9 the scores of the girls in both schools exceed those for the boys. In grade 12, this is reversed, due to the fact that more boys than girls in the whole group of seniors take advanced courses in mathematics, thus raising the average for the boys above that of girls. The relation between achievements of seniors and the number of courses of mathematics taken is presented in Table XI.

TABLE XI. RELATION OF SCORES ON ALGEBRA TEST TO
NUMBER OF COURSES IN MATHEMATICS TAKEN

| | <i>Less than 3 Courses</i> | <i>Three or More Courses</i> | <i>Total</i> |
|------------------------|--------------------------------|----------------------------------|--------------|
| A. Robbinsdale | | | |
| Boys | 3.8 | 23.3 | 8.0 |
| Girls | 4.2 | 21.0 | 5.0 |
| Total | 3.9 | 23.3 | 5.7 |
| N | 120 | 28 | 148 |
| B. North High | | | |
| Advanced algebra group | | 25.0 | |
| C. St. Louis Park | | | |
| Advanced algebra group | | 25.5 | |

It is evident from the data in Table XI that the achievements of seniors who have had less than three courses of mathematics, ordinarily algebra and geometry or algebra only, are much lower than the achievements of seniors who have had three or more courses in mathematics, many of them taking mathematics at the present time. The great difference in the levels of performance is undoubtedly largely due to the fact that for a period of time, in most cases at least two years, the students who have had less than three courses in mathematics have had almost no contact with algebra, except incidentally in courses in science. It is also quite probable that those who have had three or more courses are a selected group with aptitude for mathematics.

A comparison of the two advanced algebra groups from North High and St. Louis Park shows that their level of performance compares quite closely with the level of the Robbinsdale students who have had three or more courses and also with classes now completing algebra I as shown in Table IX.

From the above data we can quite safely conclude that at the end of the ninth grade the level of performance of pupils in these schools is quite high, approximating 20 out of 29 correct or about 69 per cent, compared with a score of say 25 correct, or 86 per cent, for those who have had three or more courses in mathematics. If these ninth-grade pupils do not elect more than one course in mathematics, and thus have little, if any, contact with the processes,

their performance when they are seniors will drop to a very low level, say 20 per cent, compared to the 69 per cent at the end of algebra I. The level of ability of the group of pre-flight boys beginning their course in mathematics, compared with the level of ability of those completing ninth-grade algebra but is below the level of those who have taken advanced algebra.

The data in Table XII show the number of items answered correctly on each part of the test by a group of pre-flight students. The key at the foot of the table will help in the interpretation of the data. On every part of the test except A there were students who had no items correct. There were also students who had every item correct on each of the seven parts. These facts are a reflection of the range of scores on the test which was from 2 to 29 items correct. It is clear that some plan of instruction should be devised

TABLE XII. NUMBER OF ITEMS CORRECT IN ALGEBRA TEST
(92 Pre-flight Students)

| | 0 | 1 | 2 | 3 | 4 | 5 | 6 |
|---|----|----|----|----|----|----|----|
| A | | 4 | 25 | 56 | 7 | | |
| B | 8 | 8 | 7 | 9 | 15 | 45 | |
| C | 4 | 11 | 26 | 45 | 6 | | |
| D | 12 | 12 | 15 | 25 | 28 | | |
| E | 10 | 20 | 24 | 38 | | | |
| F | 12 | 12 | 25 | 43 | | | |
| G | 23 | 2 | 7 | 6 | 23 | 2 | 29 |

A—solving for values of x (4 equations)

B—solving formulas for letters (3 formulas—5 items)

C—evaluating formulas (4 formulas)

D—operations with signed numbers (4 examples)

E—solving fractional equations (3 equations)

F—computing with algebraic fractions (3 examples)

G—simultaneous equations (3 equations—6 items)

that makes it possible to provide effectively for this wide range in individual differences. Some method of using diagnostic tests keyed to appropriate self-helps and explanations of procedures would be entirely feasible.

The large discrepancy between the level of ability of high-school seniors as a whole and pre-flight students raises an important question for our high schools to consider. *What can be done to raise the level of ability in algebra of seniors about to be inducted into special branches of the Armed Forces to at least the level of ability of pre-flight students?* Presumably this level may be regarded as a minimum for pre-induction courses that might be established by our high schools, assuming that the requirements set up by the committee are valid for the various branches of our Armed Forces. The level suggested is approximately the median level of performance of ninth-grade algebra

classes at the time they complete the course in beginning algebra. The problem thus presented can therefore be re-stated as follows: What should be the nature and length of a refresher course in algebra (and geometry) that would enable high-school seniors to re-establish abilities in algebra that they at one time did possess but that due to disuse in the cases of those who had taken not more than one or two courses in mathematics had to a large extent been forgotten?

It is quite probable that the solution for algebra will be the same as that which has been found to be satisfactory for arithmetic, namely, a short systematic, intensive review of the basic essentials, probably not more than a month in length for most pupils. In order to adapt the review to the needs of each individual, diagnostic tests should be provided to locate the specific weak spots of the student. In the case of these high-school students, these tests should be systematically keyed to study helps containing necessary explanations of procedures, so clearly written that the student can proceed independently in the attack on his weaknesses with a minimum of help from the instructor. Practice exercises should also be made available at the same time to insure the establishment of the important skills. Students should be able to progress through these materials at different rates. Those who have a few weak spots would complete the review work in, say, one or two weeks; others would require as long as several months, as has been found to be true for arithmetic. Re-tests can be given to determine how effective the review program has been. This work should be made available to all boys and girls who wish to undertake it. The matter of scheduling it can be adjusted according to the situation in each school.

It is planned to conduct several experiments along this line in the vicinity of the Twin Cities during the present year to determine the correctness of the hypothesis that a short, systematic, intensive review is all that is needed to re-establish skills in algebra that the seniors undoubtedly at one time did possess.

TESTS IN ESSENTIALS OF ALGEBRA

Name _____ Grade _____ Place _____
 Courses Taken: Algebra _____ Plane Geometry _____ Higher Algebra _____ Solid Geometry _____ Trig. _____

This test contains examples in the essentials of algebra needed for successful work in training courses in various branches of the Armed Forces of this country. How many can you work correctly? Write the answers in the spaces at the right.

A. Solve for value of x :

(1). $3x + 2x = 20$

(3). $3x$

$- = 10$

(2). $2x - (x - 4) = 6$

(4). $4x^2 = 36$

Answers

A1. _____

2. _____

3. _____

4. _____

B. Solve these formulas for values of letters indicated:

(1). Solve for n and s :

$$2n=3rs$$

(2). Solve for c and d :

$$s=2c+d$$

(3). Solve for c :

$$a = \frac{3b}{4c}$$

Answers

B1 (n) _____

1 (s) _____

2 (c) _____

2 (d) _____

3 (c) _____

C. Evaluating formulas:

(1). If in the formula, $r=p+pgt$,
 $r=44$, $g=5$, and $t=2$, find p .(3). If in $a^2=b^2+c^2$, $a=10$
and $b=6$, find c .(2). If in the formula $r = \frac{ab}{a+b}$
 $a=10$ and $b=15$, find r .(4). If in the formula,
$$d = \frac{v^3}{2r}$$
 $d=4$ and
 $v=8$, find r .

C1 _____

2 _____

3 _____

4 _____

D. Operations with signed numbers:

(1). $-a^2(5a^2-2a+6)=$

(3). Factor: $m^2n^2-2n+n^3y=$

(2). $-6x\sqrt{12x^3-18x^2+6x}$

(4). $(+60a)+(-80a)-(-4a)=$

D1 _____

2 _____

3 _____

4 _____

E. Solve for values of letters on these fractional equations:

(1). $\frac{a}{2} + \frac{5a}{6} = 4$

(2). $\frac{x-4}{2} - \frac{x-3}{3} - \frac{1}{6} =$

(3). $\frac{x}{10} - \frac{4}{5} =$

E1 _____

2 _____

3 _____

F. Computing with algebraic fractions:

(1). Reduce:

$$\frac{4a^3b^3}{6a^3b}$$

(2).

$$\frac{3a^3}{4b^2} \cdot \frac{2b}{a^4} =$$

(3).

$$\frac{4a^3b^4}{3x^2y^2} \div \frac{2ab^2}{xy^2} =$$

F1 _____

2 _____

3 _____

G. Solving simultaneous equations:

(3).

(1). $x=2y+1$ (2). $2c-3d=-5$
 $3x+y=17$ $5c+9d=37$

$$\frac{a}{3} + \frac{b}{5} = 9$$

G1x _____

1y _____

2c _____

2d _____

3a _____

3b _____

Number Correct _____

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A Self-Rating Scale for School Principals

THOMAS H. BRIGGS

THE SCHOOL PRINCIPAL is one of the freest of public officials. Like the superintendent, who in many small communities is also a principal, he is entrusted with the responsibility of "running the school;" but as a rule he is given few directions by anyone as to what specifically he should do, and criticism from the public, and to a large extent from his superiors as well, is likely to be concerned more with his personal relations or with relatively petty details than with matters professionally important.

Although principals are supposed to have professional preparation for their responsibilities, it is well known that many are selected because of other reasons, such as success in teaching, good personality, and promise of learning to run the school satisfactorily. These principals learn "on the job," usually, it should be noted, at the expense of the pupils in the school, who fail during the apprenticeship to get what they are entitled to in the only opportunity that they will ever have.

Whether a principal's preparation has been adequate or not, he has the largest, and often the sole, responsibility for his own professional growth. Numerous books and magazine articles have been published on the duties of the school principal; at conventions plans, programs, and devices are discussed; and summer school courses, some of potential help, are offered at hundreds of colleges and universities. But relatively little pressure is exerted by others on the principal to promote the growth of his professional competence. Unless he assumes this responsibility, he is likely to get into a rut, performing with more or less satisfaction to the public and to himself such routine duties as are necessary to make the school continue without obvious disturbance — or progress.

The following rating scale has been prepared for use by those principals who are ambitious for their own professional growth. Although not primarily for use by superintendents or boards of education, it may profitably be used by them as suggestive of characteristics and competencies when they are considering candidates for a principalship or when they are evaluating the activities of those in service. This rating scale is chiefly for a principal to use when he wishes to check himself, to see to what extent he is meeting the challenges that confront him, whether he has realized their existence or not, to direct his energies to those problems that are most important, and from time to time measure his growth in professional effectiveness. If he really wants to grow, he must realize that he himself must find the direction and must provide most of the stimulus.

Numerous other rating scales have previously been published, some of them similar to this one, others different in their purposes and plans. All that could be found have been consulted, and from some of them good items may have been used. But for the most part this rating scale has been developed from the activities presented and advocated in my *Improving Instruction*,¹ supplemented by observation of activities and needs in many principalships. Emphasis has been laid not on the taking of certain courses, the reading of certain books, and the like, but, rather, on those characteristics and duties that make for a constantly better school.

The practice of making a scale with each item weighted so that the total gives a supposed index of competence cannot be too strongly condemned. In the first place marked deficiency in any one of many characteristics or activities may make for failure, whatever virtues may be possessed and manifested. An amputated nose would destroy any claims to beauty that a woman otherwise physically perfect might have. No person could be considered a successful principal if he were known to follow a bad moral code. On the contrary, a principal might be markedly successful in promoting a good school even if he were slovenly in his dress, awkward in speech, or inefficient in his public relations. Moreover a weighted scale is valueless because there is no agreement on the weights that should be assigned the several items and because the weights should certainly vary under different conditions and at different times.

This rating scale does not attempt to set up "standards" that are based on the results of any objective procedure. There has been no attempt to count the frequency with which each characteristic or activity has been mentioned in professional books and magazines, for such a pooled evaluation by authors who have not considered the whole problem or the same aspects of it would be meaningless. Nor has there been any appeal to "a jury of experts." The items included were selected because of their apparent contribution to an ideal, and they have been criticized by several hundred graduate students, most of them experienced principals and teachers, for clarity and for other matters. And, finally, no "standards" were sought from consideration of the frequency with which characteristics are possessed or activities performed by principals in service. What a principal who wishes to grow professionally wants to know is what he should be and what he should do.

This rating scale is long, and necessarily so, for the responsibilities of the principal are numerous and complex. Even the number of items used is not sufficient to include all of a principal's activities;² but it is believed that they do present those that are most important in professional competence. Because of the length of the rating scale, it will be used only by principals who are seriously concerned with their professional competence and growth. No brevity

¹Briggs, T. H. *Improving Instruction*. New York: The Macmillan Company, 1938.

²Some years ago Ayer presented in *The American School Board Journal* (Feb., 1929, ff.) a list of one thousand duties performed by the high-school principal.

can be adequate for those who seek a miraculous short cut to competence; no length is too great for those who are sincerely enough interested in their own growth to work endlessly to promote it. In this scale there is a certain amount of repetition, but that is intentional, similar items appearing each time in a new setting in order to round out the unity of that section or to give desired emphasis.

To use the scale properly will take time, a lot of time, and an equal amount of honesty in self-evaluation. There is no profit in anything less than a searching and sincere effort to become aware of one's own abilities and of one's own deficiencies. On many items the principal using the scale will do well to seek the help of others, especially of the teachers, in making evaluations. Bryan found³ that the teachers who got the anonymous estimate by pupils of their activities profited markedly thereby, and a principal who dared ask the teachers similarly to rate him by this scale would undoubtedly find it helpful even if at times embarrassing. But it would not be wise for him to get such returns unless he is willing to exert himself mightily and continuously to achieve the improvements that are suggested.

USES OF THE SCALE

It is suggested that one using the scale should first read it through so carefully that he understands not only every item, but also the scope of the whole list. Then he should consider the following suggestions of uses to which the scale can be put and decide which ones he desires to emphasize at the present or at a future time. It is probable that he will be wise not only to work at one use at a time, but also to concentrate on the items that indicate what are the most probable means of success or the most important needs in the situation. But at the very beginning he will do well to make for himself a program for extending the uses and for enlarging the number of items to which he will give special attention.

1. *To extend one's conception of the dignity and responsibility of the principalship.*

Despite the number of duties that keep every principal busy, whether efficiently so or not, it is probable that the list of challenges suggested in the scale will somewhat extend his conception of the possibilities and of the obligations in the position. When in his reading of the items in the scale he comes across one that he has not before thought of as important, he should evaluate it with care to see to what extent he should incorporate it into his program. Taken all together, the items fairly well indicate what a good principal should be and do.

2. *To bring to one's attention qualities and duties that he may have overlooked in practice.*

³Bryan, Roy E., *Pupil Rating of Secondary School Teachers*. New York: Teachers College, Columbia University, Bureau of Publications, 1937.

However well informed a principal may have been as to his responsibilities and duties, he is a most unusual person if he does not tend to fall into a rut of routine, out of which he needs something, like this scale, to jar him. He may perform some duties so well that he forgets that others are also important. The scale also may call attention to some duties that the principal may have performed but with less than desired or possible efficiency. It may make a contribution, then, by revealing obligations that have not before been appreciated, by emphasizing some that may have been neglected, or by giving a picture of most of the important duties grouped into related units.

3. *To stimulate one to improve the program of the principalship and to perform better and more consistently the duties necessary to make it effective.*

The principal who has a truly professional spirit and a genuine ambition needs only the stimulus of knowing what he ought to be and to do to impel himself into active effort to grow. The items of the scale will be generally recognized as suggesting ideals which every principal would be happy if he could exemplify, even to a moderately satisfactory degree. They indicate not merely deficiencies that he should remedy, but also ideals toward which he should set himself to grow. The suggestions may even stimulate an artisan principal to an ambition to become through hard and continuing work a real artist.

4. *To aid one to estimate his own competence in performing the most important duties of the principalship.*

The advice that Socrates gave long ago is still sound: "Know thyself." One has an inestimable advantage when he has made a self-analysis in terms of the obligations that he has, and in consequence when he knows his own strengths and his own weaknesses. One may feel competent in a general way, but he has more assurance when he realizes competence in the numerous detailed activities which he should perform. With the strength consequent upon such realization, he more readily accepts the challenge to increase his competence and also to remedy deficiencies of which he is made conscious.

It is probably of more importance that a principal should know wherein he is strong than that he should focus his attention solely on his weaknesses. Recognized strengths give confidence, and when developed they give power. Moreover, they make it easier for one to admit his deficiencies and undertake to remedy what detracts from his general power. A person cognizant only of many weaknesses has small ambition to attempt growth.

5. *To serve as a basis for rating by others.*

As stated earlier, this scale is intended primarily as a guide for self-rating. But if a principal wishes evaluation by others as to his manifested competence, this is a guide that they may use in assembling their judgments; by using the several items they can more adequately and more helpfully express their

opinions as to the details in which he is in varying degrees efficient. One seeking to know himself and so to direct his efforts at growth is helped very little by blanket terms of approval or disapproval; but if the critic says that he is outstandingly successful in this activity and that he is weak in that one, the principal has suggestions for a definite future program of improvement.

If the principal wishes help from his superintendent, what would be better than to ask for judgments on each of the items listed? If that is too much, critical items could easily be selected. If the superintendent has volunteered some fault-finding, it could be given its relative importance when associated with judgments on all of the items or on a number of the more important of them.

It would not be a bad idea for every principal to make each year to his superintendent an extended report, preferably oral, of what he has done and of what he has tried to do, relating both to the activities suggested in this entire list. Such a report would certainly contribute to a better mutual understanding and would also fortify requests for assistance, equipment, and the like; also it would enable the superior officer to give recognition, encouragement, and advice of a kind that the situation manifests as deserved and needful.

If a principal wishes the help of the teachers in evaluating his effectiveness, he could well supply them with this scale so as to guide their selection of activities on which to express a judgment. Random opinions that the principal is in varying degrees successful or helpful can do little more than flatter or hurt one's vanity; but an honest series of judgments, which is likely to be got if they are expressed anonymously, on the enumerated details will contribute much to one's knowledge of wherein, by the judgment of others, he has succeeded and wherein he needs to improve. Of course, if a principal put this scale into the hands of the teachers, he would be indicating an ideal of which he, and every other principal as well, falls somewhat short; and in consequence he would perhaps unnecessarily lay himself open to a certain amount of criticism. Personal and professional relations will determine whether or not it is wise to ask teachers for their evaluation in terms of an ideal; anything less, however, is not likely to be of much help.

6. To support an application for a principalship.

Several studies have supported common observation that candidates for educational positions do not always base their applications primarily on evidences of professional competence; and certainly employers, whether superintendents or boards of education, in practice give less weight to such evidences than it is reasonable that they should. Perhaps their concern with personality, good character, and "success" in previous work, which may have demanded somewhat different abilities from the principalship, is the result of an ignorance of the scope of needs for professional leadership in a school. An applicant

for a principalship can get from the list of items in this scale suggestions of the claims that he can make for his readiness and competence for such a position. He could do far worse than to furnish the prospective employer with a copy of the scale, suggesting that it be used as the basis of inquiry as to the competence of all candidates. If such use were intelligently and consistently made, it is certain that standards for the principalship would be materially raised.

7. To assist a group of principals to set up standards for professional efficiency.

It is assumed that every principal who has ambitions to increase his professional competence has associated himself formally or informally with others who have similar interests. The most usual forms of such association for mutual aid in promoting common ideals are an organization of principals, in a district, state, or nation, which presents programs in stated meetings, and small groups who meet irregularly for free discussion. The members of both such groups are concerned with the promotion of standards for the profession, standards which will direct the growth in efficiency of each member, and also in formulating tests by which such efficiency can be measured. For these purposes this rating scale can be used. If the members of the group after careful and full consideration and discussion, which should be highly profitable to all, decide to amend the scale in any respects, so much the better. If after focusing their attention on what is proposed as desirable in a principal, they are able to agree on better standards, they will have set for themselves goals that should stimulate them to growth toward increased efficiency.

DIRECTIONS FOR USE OF THE RATING SCALE

An individual planning to use this rating scale for the purpose of helping himself to improve in effectiveness as a principal, which is the use primarily intended, should first of all read it through so carefully that he understands not only every item but also its contribution to the whole group in which it appears. This first step will be time-consuming, for one will need to do more than get the obvious meaning of item after item; he will be continually challenged to reflection that he may concrete each meaning and apply it to himself. Unless he is willing to devote the time necessary for complete understanding, he is not likely to profit greatly from pursuing the exercise.

After understanding, not only of the individual items but also of the unity of the several parts of the scale and of the composite whole, one should attempt to answer each question with entire honesty. When seeking to plan wisely for one's own growth, there is no more profit in self-flattery than in conventional modesty. What one wants to know is to what extent he measures up to the implied requirements of the professional position in which he aspires to be effective and increasingly competent. When doubtful of the

answer to any question, one should search his memory for evidence, or he should experiment, or he may by discreet means get the judgments of others who are in a position to know. But if he gets expression of such judgments, he should himself evaluate them in the light of all that he knows and thinks. In the last analysis it is what one himself believes as to his competence that will determine the program that he formulates for improving it and the assiduity with which he pursues it.

The honest answers one should then consider in order to ascertain his existent and most promising assets. Too much emphasis cannot be placed on his doing this rather than on his concentration on his weaknesses. Weaknesses need to be strengthened, of course, and any that materially interfere with success may need immediate attention. But many a person has failed to achieve possible eminent success by spending all his time and effort on bringing up the depressions in his efficiency contour merely to a level of mediocrity. The wise person seeks to find in which respects he has unusual competence or unusual promise of growth, and by concentrating on them he gains notable power and self-confidence. With these results he can attack his weaknesses with more likelihood of success. Moreover, what is a fatal deficiency in a weak principal may seem unimportant or even insignificant in a strong one. There are many reasons why it is wise to begin a program for self-improvement by focusing on the details in which one is already fairly competent and in which there are possibilities of unusual growth.

Naturally everyone will find in using the scale that he has many assets, and from them he should select those that he judges most important to increase for greater professional effectiveness. For increasing these selected assets one should make a definite program, which, though it may be difficult, is far easier than is following it persistently during the weeks and months to come. But it is obvious that though a principal may get an occasional stimulus or bit of help from others, he has the chief, almost the sole, responsibility for his own growth. And that will come only to one who persists over a long period of time — continuously, it may be said — in planned effort.

Naturally one should also consider his weaknesses that are revealed by the inventory and decide which of them, if any, are so harmful that they should be remedied at once. For these he needs also to make and persistently to follow a program. Some weaknesses are easily built up and can be cared for casually; some that need much attention can safely be tolerated while more important matters are receiving emphasis; and some are so inherent in one's personality that they are likely to continue, whatever effort is given to remove them. Recognition of an existent fact and of relative values is better than fruitless effort and worry.

After this first session with the rating scale a principal may enter by each item a memorandum that in his own honest judgment he is

- a. notably good and promising;

- b. reasonably satisfactory;
- c. active to improve;
- d. negligent;
- e. notably deficient.

Or he may make any other notation that he considers just and useful.

Perhaps the most important use of the whole self-rating scale is a periodic reconsideration of one's own estimates. At the end of each semester, or certainly at the end of each year, the principal should rate himself again and with equal honesty. Thus he will be able to judge, probably much better than anyone else could possibly do, whether or not he has grown and to what extent. Evidence of growth will be gratifying and impelling to still further effort. Failure should challenge to a revision of plans, perhaps with the aid of others who can help, to a renewal of effort, or to a redirection of energy. Whatever one finds at each period, repeated self-evaluation and also new conditions outside oneself should cause a revision of the program. A repeated use of the self-rating scale, which will be made only by those who are concerned so seriously to grow that they persist in the effort, cannot fail to have its effect in direction and in improvement.

A SELF-RATING SCALE FOR PRINCIPALS

I. PERSONAL QUALITIES

1. What sort of person do I wish to be ten years from now? How am I planning to become that sort of person?
2. What am I doing to maintain physical efficiency at a satisfactory level?
3. Do I present a good personal appearance with respect to cleanliness, clothes, and general grooming?
4. Have I made an honest inventory of my own personal assets and short-comings?
5. Am I making a persistent effort to increase my strengths and so to use them that my liabilities are less a handicap?
6. What have I done recently to manifest leadership ability? What can I do in my present situation?
7. What evidence can I recall that I am improving in open-mindedness? in sympathetic understanding? in self-control? in patience? in co-operation? in tact? and in enthusiasm?
8. Do I reflect on my experiences in order to improve my tact and diplomacy?
9. Do I learn by my mistakes and improve by my successes? Consider what I have done in these matters during the past year.
10. Do I maintain a growing ambition and work consistently to achieve it, or am I becoming satisfied to live in a rut, social, cultural, or professional?

11. Do I seek and accept new challenges in order to keep myself alert and growing? What challenges are before me now?
12. How broad-minded have I been in considering and in dealing with new problems?
13. Do I habitually use deliberative thought before making decisions on important matters, or do I impulsively commit myself and then seek a justification?
14. Do I refrain from worrying unnecessarily?
15. Do I stop worrying about unimportant matters after a decision has been made, realizing that most judgments are of relative goods, rather than between what is right and what is wrong?
16. Do I maintain my optimism even in the face of repeated adversities?
17. Do I persist sensibly despite opposition in a program of the rightness of which I am convinced, modifying it temporarily if necessary but never ceasing in efforts to make it effective?
18. Is my sense of humor a softening yet penetrating trait that keeps me a human being? Is it ever sharp at another's expense?
19. Do I maintain a spirit of confidence without appearing to others too self-assured?
20. Do I speak in public and in teachers meetings clearly, concisely, and effectively and only after reflection and adequate preparation?
21. How can I improve the efficiency of my routine work so that I do it promptly and yet leave time for more important matters?
22. Do others find me dependable?
23. Am I attempting so many things that I am ineffective in important leadership?
24. Do I set a satisfactory standard for industry and promptness?

II. PERSONAL RELATIONSHIPS

A. General

1. Am I approachable, accessible, and helpful so that teachers, pupils, and others do not hesitate about coming to see me?
2. Have I learned to protect myself from unnecessary conferences, at the same time realizing that what seems to me trivial may be of great importance to others?
3. Do I possess the ability to draw other people out and to make them feel free to think and speak their honest minds when in my company?
4. Have I learned to listen until I get all pertinent facts and to convince my caller that I have done so by summary, by response, or by indicated action?
5. Have I learned how to terminate a conference without offense when the matter in hand is finished?
6. Do I feel and manifest a genuine sympathy for the problems of those who come to me for advice?
7. Do I exert myself to prove helpful when help is needed?
8. Do my colleagues consider me open-minded to opposing views and to advice that is given? Do I honestly try to evaluate them and their motives fairly and to learn from them?

9. Do I consistently respect the confidences of others, refusing to accept them when for the larger interest of the school I cannot do so?
10. How am I trying to generate in others a feeling of confidence in me?
11. Do I make a point of giving credit to others for their efforts and for their achievements?
12. Do I make a habit of sincerely expressing praise, both privately and in public, with justifying reasons?
13. Do I give encouragement and criticism tactfully when and where it is due?
14. Have I learned to be honest and frank in stating my opinions without hurting other people's feelings?
15. Am I consistently loyal to those who work with me?
16. Do I consistently manifest to the responsibilities of my position greater loyalty than to individuals?

B. *Staff*

1. In what respects can I make more satisfactory my relations, both personal and professional, with the superintendent, the teachers, the pupils, the parents, and the general public?
2. What evidence can I adduce of such relations improved by my own efforts during the past year?
3. Am I hospitable to the opinions, either sought or volunteered, of others, and do I consider them fairly, fully, and without prejudice, and act in accord with what is good?
4. Do I know all co-workers sufficiently well to have discovered the activities in which they are or potentially can be most effective? Do I recognize, encourage, and assist their growth in these respects?
5. Am I familiar with the human background of each teacher, as well as with his interests, handicaps, temperament, and ambitions? How can I use such knowledge more effectively?
6. Do I stimulate my co-workers to work consistently at their best?
7. Do I encourage and stimulate the professional ambition and growth of the teachers?
8. To what extent does each member of the staff as a result of my efforts manifest growth in the professional attitudes and efficiency?
9. Am I alert to recognize and to promote opportunities for advancement by members of the staff?
10. Do I anticipate difficulties that my co-workers are likely to encounter and so far as possible prevent them or minimize bad results?
11. What difficulties are now in the offing? How can I prevent them prepare for their advent, or take advantage of them for constructive help?
12. Have I sufficiently concerned myself to understand and to promote the mental health of the teachers?
13. Have I allowed relatively unimportant elements in a situation to seem to me, or to others, more important than they really were? How could I have secured a better perspective?
14. What have I done to increase the number of suggestions by teachers

for the improvement of the school? What could I do with each suggestion for improving the school and for increasing the professional spirit of the teacher?

15. Do I accept without protest responsibility for everything justly criticized in the school by the public?

C. *Pupils*

1. Do I know, or provide for a representative in the school to know, each pupil sufficiently well so that he is given wise guidance, both personal and educational?
2. Have I had given the optimum number possible of intelligence and achievement tests and had the results used in guidance?
3. Have I insured that all pertinent data accumulated about each pupil have been used for his guidance?
4. Have adequate physical examinations been made and the results used for remedial work?
5. To what extent have I provided that each pupil receive appropriate recognition of his efforts and sympathetic encouragement?
6. Am I assured that all possible has been done to secure the social adjustment of every pupil in the school?
7. Is each pupil making the progress commensurate with his abilities?
8. Do I profit by evaluating pupils' own opinions of their needs?
9. Has every pupil found one or more extra-curriculum activities in which he shares so that he is happy and growing in what is worth while?
10. What have I done to help pupils understand what education is, its values to them as well as to society, immediately or assured in the future, the facilities offered in the school and elsewhere, and their responsibilities as well as their opportunities to use them?
11. Have I given pupils such an understanding of the school problems and procedures which directly concern them that they have had an opportunity to grow through sharing in reaching solutions and in making new programs?
12. Do I always try in conferences to get a pupil's point of view and to consider it fairly?
13. Do I manifest to pupils the sympathy of understanding rather than that of sentimentality?
14. In making decisions about matters with which pupils are deeply concerned, either individually or as a group, have I made sufficient effort to convince them that I have been fair, considerate, and wise?
15. To what extent have I followed up the careers of former pupils so as better to understand the needs of those now in school?
16. Do I retain an interest in youth who have left school and a sense of responsibility for helping them to increased success? Have I imparted some of this feeling to the teachers?
17. Do I measure all of my own efforts in terms of value to the pupils, realizing that in their growth lies the only evidence of the effectiveness of education to society?

D. The Community.

1. Have I made a successful effort to understand the unique atmosphere and temper of the community?
2. Am I well acquainted with the important problems of the community?
3. To what extent have I made an honest effort to co-ordinate the school program with the community life?
4. Do I participate actively in the worth-while affairs of the community, but refrain from such participation as would interfere with the performing of my professional obligations to the school?
5. Do I protect teachers from invitations or demands that they assume unreasonable or unduly burdensome community responsibilities?
6. Have I made parents and the public at large, especially such groups as service clubs and churches, aware of, interested in, and sympathetic with the objectives of the school and of the general means proposed for achieving them?
7. Have I made a reasonable effort to learn the opinions of laymen about education, to evaluate them, and to profit from reflection on them?
8. Have I endeavored to learn from laymen in business about organization and administration, to evaluate their suggestions, and to profit from reflection on them so that I can improve my own work?
9. Have I publicized the successes of the school, especially those for which teachers and pupils are responsible, so that the public will have such an understanding and pride that it will give further support to the program?
10. What evidence can I cite that the attitude of the public toward the school has improved?
11. How can I better protect the school and the teachers from unfair criticism by the public?
12. Have I recognized that criticism is an expression of interest, which should be capitalized in constructive ways?

III. PROFESSIONAL TRAINING AND CULTURAL DEVELOPMENT

1. Have I analyzed the conflicting philosophies of society and of education and tentatively formulated one that is clear and acceptable to me?
2. Wherein do I need further to clarify my philosophy and to complete it?
3. How have my ideals changed during the past year? In what respects can I say that they are definitely higher than a year ago?
4. Am I open-minded to change details of my philosophy in the light of new knowledge and changed conditions?
5. Does my philosophy habitually influence and direct my judgment in making all important decisions and plans?
6. Does my concept of the purpose and place of the public school in a democratic society make practical differences in my program?

7. What practices in the school are now in conflict with my philosophy or with any part of it? What changes are indicated as desirable?
8. Am I bold to experiment practically in terms of my philosophy and honestly to evaluate the results?
9. Wherein do I feel a lack of professional competence to carry out the responsibilities entrusted to me and successfully to accept the opportunities that I see?
10. What long-time plans have I made for supplying my professional deficiencies? What immediate plans?
11. What have I done in this matter during the past year?
12. Do I conscientiously follow a program that provides each day for some time for professional study?
13. Do I need a goad to make me continue my professional growth?
14. Do I take advantage of and help create other possibilities for me to meet regularly with an informal group of people with similar professional interests for the discussion of common problems?
15. How can I improve my techniques of profiting from educational conventions and conferences?
16. Do I read regularly current publications covering a wide range of interests, both professional and cultural?
17. Do I read regularly educational magazines and books, both conservative and progressive? How can I improve my methods of doing such reading?
18. Do I habitually evaluate in terms of my philosophy what I read and translate what is good into the practical school program?
19. What changes in the school program have I made as a result of my reading?
20. Do I maintain a reasonable program of visiting other schools for the purpose of getting stimulation and suggestions of good practices? In what respects have I changed our school program as a result?
21. In which of my professional duties am I most proficient? The improvement in which activities offers the greatest possibilities for outstanding success?
22. Am I weak in my understanding or practice of professional ethics in any respect?
23. Am I growing culturally as I get older?
24. Do I utilize maximally the cultured resources of the community?
25. Do I reserve time regularly for leisure activities that are cumulatively profitable to me and, at the same time, not offensive to others?
26. What obligation do I have to myself to set aside some part of each day to improve myself culturally?
27. Am I doing what I can, both within the school and outside, to induce teachers and pupils to advance their own cultural interests and those of the community?

IV. SUPERVISION

1. Have I planned a long-term program of supervision?
2. Do I encourage the teachers to have a part in supervisory planning?
3. Do our plans take into consideration the local situation and its needs, both present and future?
4. Have I conscientiously adhered in so far as possible to my program of supervision?
5. Do I emphasize preventive, constructive, and creative types of supervision rather than the corrective type?
6. Have I begun the development in teachers of the habit of justifying all of their practices and proposals in terms of simple principles that they understand and approve?
7. Do I permit within the framework of such principles the maximum possible freedom of teachers and encourage them in creativeness and experimentation so that they grow in alertness and effectiveness?
8. What evidence is there that teachers are increasingly using basic principles to direct their planning and procedures, even at the expense of tradition?
9. Am I adequately acquainted with the subject-matter and tools of the various subjects to aid the teachers in evaluation and in working out plans for improvement?
10. Am I familiar with a justifiable statement of the immediate and ultimate objectives of each subject? Have I aided the teachers to relate them to and to evaluate them in terms of ultimate educational objectives?
11. Do I make a practice of refreshing my knowledge before observation and conference?
12. Do I make frequent classroom visitations to all teachers and accumulate important revealing data?
13. Do I give most supervisory attention to the ablest and most promising teachers?
14. Do I adequately use the accumulated data from classroom observations in stimulating and directing the growth of teachers?
15. Do I have the ability to analyze an observed situation and after reflection to make constructive suggestions, especially in terms of general principles?
16. To what degree are individual conferences marked by satisfactory results that are apparent to both teacher and supervisor?
17. Have I regularly held and planned teachers' meetings encouraged the teachers to formulate educational policies and plans in accordance with recognized principles of education?
18. What could I have done that I neglected in using directed reading, directed study, directed visiting, demonstration lessons, institutes, lectures, and the bulletin board as a part of my supervisory program?
19. How have I used or had used what teachers acquired from their reading, study, and observations?

20. Does my supervision tend to stimulate teachers to intellectual activity and professional growth?
21. Have I encouraged and helped teachers better to understand each other and each other's work and to work together more co-operatively?
22. Have I sought through systematic observation to find evidences of the successful application of the principles formulated in teachers' meetings?
23. Do I consistently seek to find what a teacher can do best and then provide him opportunity to do it?
24. Have I encouraged and helped each teacher to become superior along some particular line of growth?
25. Am I initiating or encouraging simple experimentation and research?
26. Have I fairly attempted to learn the principles of curriculum construction? How much am I encouraging and stimulating it?
27. Are there in the community and not now used any services available for enriching the curriculum?
28. Have I publicized and given generous credit for unusual and meritorious work?
29. Do I have the habit of reflecting regularly on my supervisory efforts in order to learn how to improve them?
30. Can I judge my own supervision impartially and objectively?
31. Have I sought to evaluate objectively my supervisory program in terms of increased teaching effectiveness?
32. What evidence have I that my supervision this year is better than it was previously?
33. Is there evidence that teachers are more inclined to welcome my suggestions, to seek them, and to profit from them?
34. What evidence can I cite that education in the school is effectively used outside?

V. ORGANIZATION AND ADMINISTRATION

1. Do I understand better than a year ago the policies and program of my superior officers? How can I improve such understanding?
2. Have I done what I could to see that my superior officers understand and approve my policies and program?
3. What evidence can I adduce of being constructively loyal to my superior officers?
4. Do I plan my work so that each duty receives its proportionate amount of time? Do I budget my time wisely and live up to the budget?
5. Have I helped teachers so to allocate their time?
6. Do I delegate all possible routine work to others—to clerks, to pupils, and to teachers according to their interests and capabilities? Has such delegation to teachers increased their feelings of responsibility for the school welfare?
7. Have I made it evident to the staff how administration facilitates

- and does not interfere with teaching and have I insured that they do not consider it as an end in itself?
8. Do I attend to work in the order of its real importance, not allowing myself to be diverted from the essentials by pressing demands of the petty?
 9. Do I utilize my time and the time of others to the best advantage?
 10. Is my desk regularly left clean at the end of each day?
 11. Do I study the educational policies of the school for revision and improvement of the administration?
 12. Do I encourage participation by parents, pupils, and teachers in formulating policies for the school?
 13. Are all major decisions made in light of the welfare of the pupils?
 14. Am I prompt to act when delay causes discouragement or other harm?
 15. Is the building clean and well serviced?
 16. Have I adequately provided for the safety of pupils?
 17. Do I consistently look for greater utilization of building, equipment, and personnel?
 18. Do I compare the unit costs of the school operation with those in previous years and with those in other similar schools for the purpose of knowing how to justify them and to economize?
 19. What economies have I effected in the past year? Are they worth their cost?
 20. Have I made every possible effort to provide the staff with proper and sufficient materials of instruction?
 21. Do I constantly strive for real economy in the selection of supplies and equipment?
 22. Do I make wise assignments of pupils to courses and school groups?
 23. Are complete, cumulative records kept of the interests, abilities, achievements, and home conditions of the pupils and teachers? Do I use these records efficiently?
 24. Do I require or keep any records that do not justify themselves in use? Should I abolish them or see that they are used?
 25. Are my disciplinary procedures effective and educative?
 26. How have I evidenced an improvement in the methods of selection of new teachers?
 27. Do I make the best possible assignments of teachers to work so that it is done most effectively and so that they are stimulated to constant growth?
 28. Am I fair and discriminating in assigning extra-curriculum and other responsibilities?
 29. Do I grant with assignments of duty sufficient authority to enable teachers to execute their duties with confidence of assurance of support?

Meeting Teacher Shortage in Wartime Physical Education

COMMITTEE ON MEETING TEACHER SHORTAGE IN WARTIME PHYSICAL EDUCATION*

THE PROBLEM

TEACHER shortage is a serious and perplexing problem for school administrators. In spite of this difficulty the physical-fitness program is receiving increased attention. School administrators are showing initiative in adjusting their programs to meet the wartime needs of pupils.

A variety of methods is being used to meet the shortage in trained teachers of physical education. It is the purpose of this statement to present these methods for consideration. Some administrators may say that they have at one time or another tried similar plans but without success. In such instances it is urged that the suggested methods be studied and be given another trial. It is a patriotic duty and responsibility to see that high-school boys and girls become physically fit.

The Meaning of Physical Fitness

A person is said to be physically fit when he is free from handicapping defects and disease, follows good health practices, and has the knowledge, skills, strength, endurance, and will to do effectively the maximum tasks of the day. In a broad sense physical fitness might be said to be analogous to a superior health status. It is fitness for living in the home, in the school, on the farm, in the factory, or at the battle front.

The limitations of fitness are determined by inheritance, but within these limitations daily living practices develop and otherwise influence fitness. Suitable work, adequate nutrition, the correction of defects, exercise, rest, relaxation, freedom from worry and tensions, the use of preventive and therapeutic medical services and the avoidance of excesses, including alcohol and

*The personnel of this committee, representing the Army, the Navy, the U. S. Public Health Service, the Committee on Physical Fitness of the Federal Security Agency, professional organizations in education, schools and colleges, and the U. S. Office of Education, was Col. Theodore P. Bank, Chief of Athletic and Recreation Branch, Special Services Division, War Department, Washington, D. C.; Lieutenant Franklin R. Fielding, U.S.N.R., Liaison Officer to U. S. Office of Education, Navy Department, Washington, D. C.; William L. Hughes, Professor of Health and Physical Education, Teachers College, Columbia University; Major Thad Hungate, Civilian Pre-Induction Training Branch, Industrial Personnel Division, Headquarters, A. S. F., Washington, D. C.; Louis Hutto, Director, Physical Education, Health and Recreation, State Department of Education, Augusta, Maine; Major Harold W. Kent, Infantry, War Department Liaison, U. S. Office of Education; Dorothy La Salle, Specialist in Physical Fitness, U. S. Office of Education; Mabel Lee, Director of Physical Education for Women, University of Nebraska, Lincoln, Nebraska; S. S. Lifson, Associate Health Education Consultant, U. S. Public Health Service, Washington, D. C. (Bethesda Station); Frank S. Lloyd, Executive Officer, The Committee on Physical Fitness; The Federal Security Agency; Harlan G. Metcalf, Assistant Executive Officer, The Committee on Physical Fitness, The Federal Security Agency; N. P. Neilson, formerly Executive Secretary, National Association of Health, Physical Education and Recreation, National Education Association, Washington, D. C., now Professor of Health and Physical Education, University of Utah, Salt Lake City, Utah; James E. Pixlee, Consultant, Physical Training, Office, Assistant Chief of Air Staff Training, Headquarters Army Air Forces, Washington, D. C.; and Jackson R. Sherman, Chairman, Principal Specialist in Physical Fitness, U. S. Office of Education. One of the most serious problems that has arisen in connection with the physical fitness program of the High School Victory Corps is the shortage of teachers of physical education. The statement which has been prepared by this committee proposes a plan for the solution of this problem.

tobacco, are all important in developing and maintaining fitness. Participating regularly in a good program of physical education has been demonstrated to be one of the important elements in the school program that contributes to the development and maintenance of physical fitness.

The Need for Physical Fitness

There is an immediate need for high-school students to become physically fit. They are making and must continue to make a major contribution in the Armed Forces and in wartime services.

About 25 per cent of the boys of high-school age examined for service in the Armed Forces have been rejected as physically unfit. Army and Navy officers who have had the responsibility of training inductees, constantly state that young men without physical defects are often lacking in the necessary strength, endurance, stamina, agility, and skills required for effective military service. Consequently, their military training is retarded.

Most of the girls of high-school age who are employed in war work by the end of 1943 will be in jobs which demand strength, endurance, and skill. War industry is increasingly feeling the impact of lack of physical fitness among girls and women. The high school is challenged to meet this need for physical fitness. The importance that the War Department attaches to school programs of physical education in the development of a desirable state of physical fitness is stated in the following letter.

WAR DEPARTMENT

Washington, D. C.

June 16, 1943

Dear Dr. Studebaker:

I have your letter asking whether the War Department recommends that military drill take the place of physical education in the curriculum of schools and colleges. I assume your question to apply only to the period of the present war and not to periods of peace.

The amount of military drill which can be given in schools and colleges can also be given after induction into the Army, in a relatively short period of time, and under the most productive circumstances. A good physical condition, however, cannot be developed in so short space of time, and the physical condition of a soldier is of prime importance to the War Department.

The War Department does not want to appear to advise upon the make-up of a curriculum, nor to go beyond outlining some of the elements which the Army believes would be advantageous in its recruits. Of these, a good physical condition is extremely important and a knowledge of basic military drill relatively unimportant.

The War Department therefore does not recommend that military drill take the place of physical education in the schools and colleges during this war period.

The War Department has no objection to the publication of this statement, provided it is quoted in its entirety.

Sincerely yours,

HENRY L. STIMSON, *Secretary of War.*

Steps to a Wartime Program of Physical Education

The majority of school administrators and adult citizens are agreed that the provision of an adequate wartime program of physical fitness for all pupils is one of the important and immediate responsibilities of schools. Physical education is essential to physical fitness. An adequate program of physical education activities, suitable facilities, and competent teachers are necessary to meet the needs of students. A wartime program of physical education has been prepared by a committee representing the secondary schools of the country, the Army, the Navy, the U. S. Public Health Service, Committee on Physical Fitness of the Federal Security Agency, and the U. S. Office of Education. This program has the endorsement and support of all these agencies. It has been printed in a bulletin under the title, *Physical Fitness Through Physical Education for the Victory Corps*.¹

The program described in this bulletin can be carried out with the minimum of facilities and equipment. With the necessary adaptations it has been used successfully during the past year in some of the largest city high schools and also in small rural schools operating under difficult conditions. In many schools much has been accomplished by improvising facilities and equipment. Rulings made during the past several months by the OPA and WPB have made possible the manufacture and sale of certain equipment and supplies that are needed in carrying out the wartime program of physical education.

Problems of personnel, time, and facilities should not be excuses for failure to establish a physical education program. Throughout the country excellent programs have been established and maintained under adverse conditions. The very extremity of difficulty has made some administrators eager to equal the war spirit of our fighting forces. In situations where students and patrons are apathetic or opposed to wartime physical education, the schools should secure their understanding and support.

Accepting this essential responsibility, each school administrator should take the following immediate steps:

1. Provide adequate time in the schedule
2. Provide the best available facilities
3. Secure, train, and supervise the best teaching personnel available
4. Use every other source or device for aiding personnel in developing the physical education program

Scope of Program

Every effort should be made to retain or to develop a physical education program that meets the needs of pupils conducted under professionally trained instructors. Frequently by thorough investigation of all the possibilities more can be done along this line than is at first apparent. Anything less than such a

¹This bulletin may be purchased from the Superintendent of Documents, Washington, D. C., for 25 cents a copy.

program should be considered a temporary expedient to be remedied as soon as possible.

The minimum program to be carried on in every secondary school is outlined in the manual, *Physical Fitness Through Physical Education for the Victory Corps*. Every school can carry on at least the basic suggestions outlined in this publication. Wherever and whenever conditions permit, the program should be enriched. Copies of this manual should be available in each secondary school.

MEETING THE TEACHER SHORTAGE

Many trained men and women teachers of physical education have left the teaching profession and are now serving in the Armed Forces or in industry. This has made it necessary for school administrators to recruit new teachers of physical education. The more common practices in this regard are:

1. Retired teachers have returned to service; sometimes on a part-time basis. It is recognized that such teachers may need to have some of the physical education activities demonstrated by the students.
2. Teachers who have limited training and experience in physical education and who do not meet present certification requirements have been issued temporary teaching permits.
3. Teachers of other subjects have been assigned to teaching physical education.
4. Women teachers of physical education have been assigned to teach or assist in teaching classes of boys. The use of students in such situations to demonstrate the activities has proved helpful.
5. Itinerant teachers have been used. Schedules have been devised which permit teachers of physical education to work in more than one school during the week. Such teachers, especially if some attention is given to the use of student leaders and assistance from other teachers, can initiate and supervise a program of physical education.

These teachers can be made more effective through carefully planned programs of in-service training, and through a sound educational policy in the use of student leaders. Suggestions for such programs are given below.

IN-SERVICE TRAINING OF TEACHERS

When the program of physical education is to be carried by a teacher with limited preparation in physical education, it is essential that in-service training be provided. Course content in which the teacher should be trained, procedures for carrying out the training, and ways of financing the training are suggested in the following sections.

Suggestions for Course Content

Teachers should receive training in the materials and methods indicated in the units that are described below. They should be given a broad understanding of the basic skills involved in the several activities suggested, rules of games and sports, methods of teaching them, and safety procedures. It is desirable but not essential for them to be skilled performers, themselves, pro-

vided intelligent use is made of skilled students as demonstrators. A brief statement of the ten essential units of instruction follows:

1. *The selection of pupils for participation*—The selection and classification of pupils for participation in the activities are based on: (1) their physical condition; and (2) their level of maturity. It is recommended that the physical condition of the pupils be evaluated by the observation of all pupils by their teachers and a more complete inspection of the pupils who seem to deviate seriously from the normal. The techniques of carrying on the observation and inspection are described in Chapter III on "Selection of Pupils for Training" in the manual, *Physical Fitness Through Physical Education for the Victory Corps*.
2. *Methods of organizing wartime physical education programs*—Teachers should understand that successful organizational techniques are based on sound principles of leadership. For example, the teacher should know his duties; get along well with people; demonstrate the activity or select a suitable demonstrator; encourage class participation in making decisions; organize the class so that opportunities for participation are used to the maximum; and use methods of instruction which tend to prevent accidents.
3. *The factors that contribute to physical fitness*—This unit should help the teacher to understand how such factors as exercise, nutrition, prevention of disease, correction of defects, and problems of heating, lighting, ventilation, sanitation, and housekeeping contribute to total fitness.
4. *Athletic sports*—Teachers should be given a broad understanding of the fundamentals and rules of vigorous athletic sports and methods of teaching them.
5. *Combative activities for boys*—Teachers of boys should be given an understanding of the fundamentals of combative activities, such as hand to hand, boxing, and wrestling. They should be discouraged from promoting judo and other extremely hazardous or unsportsmanlike activities.
6. *Rhythmic activities*—An effort should be made to provide a background in rhythmic activities. This is particularly important for teachers of girls.
7. *Games and relays*—Games and relays provide a maximum amount of vigorous activity for large numbers in the minimum period of time.
8. *Gymnastics*—Gymnastics make a particularly valuable contribution to muscular strength and to some skills of special use in military service.
9. *Aquatics*—Skill in water activities is frequently essential for survival in all branches of the Armed Service and in civilian life.
10. *Standards and tests*—Teachers should be familiar with techniques for evaluating progress in physical education.

Procedures for Providing In-service Training

There are many procedures for providing in-service training. Some of these are:

Consultant services—Supervision is on-the-job training of teachers in service. The learning situation in which the teacher learns from guided experiences is highly desirable. In many localities, trained supervisors are not provided and the problem of training inexperienced teachers, therefore, is compelling.

Some school systems have trained supervisors who do not now reach all of the schools. In such systems, this supervisory service should be extended through the use of assistants. For the many school systems now without trained supervisory services, a plan should be inaugurated for providing emergency supervisory services for the physical education program.

Such a plan, to be effective, preferably should be on a state-wide basis. It should have the flexibility necessary to practical use in local communities. Its object should be to make maximum use of trained and experienced teachers in helping the inexperienced teachers in the conduct of the emergency wartime physical education program. An effective emergency plan includes:

1. The basic responsibility for the plan should be assigned by the chief state school officer to the state supervisor of health and physical education. In states which lack such a supervisor, a person should be temporarily appointed as acting state supervisor of physical education.
2. As many professionally trained area consultants as deemed necessary should be appointed to serve under the state supervisor. In some states an area consultant may function in a county and in other states the geographical areas for consultant service may be of different sizes.
3. Area consultants should ascertain the need and desire for supervision of physical education programs in schools within their areas.
4. Area consultants, after consultation with the school administrators concerned, should invite competent, experienced teachers to volunteer for supervisory services.
5. Area consultants should make available to schools in need of supervision the services of competent volunteers in so far as this is practicable.
6. The area consultant should report periodically to the state supervisor.

The above plan may be adapted to use on a local or county basis. It is deemed advisable that volunteers receive appropriate recognition for their services, and that arrangements for their expenses be made by the area supervisor with the schools served unless other means are available.

Institutes—Institutes are among the most helpful procedures for increasing the competence of teachers. These may be organized by the state department of public instruction on a state-wide basis, by county superintendents on a county basis, or by the local administrator on a community basis. The facilities and personnel of state colleges and universities might be used for these institutes. Inasmuch as there are many activities with which teachers must be familiar, it is suggested that approximately one week be devoted to

the institute. If this is not practical, the administrator may wish to organize three institutes each of two days duration. These should be spaced in such a way as to afford the teacher the greatest help. It may be desirable to conduct one early in September, another early in November, and the final one early in March. Students should be provided at all institutes for the demonstration of activities.

College and university courses—Colleges and universities should help by offering special courses for teachers. Extension courses, short courses, and field courses are some of the types which may suit the local need. When teachers live at great distances, the institution may find it advisable to offer correspondence courses.

Conferences—There should be regular conference periods when the in-service trainees and the school principal or person delegated as physical education supervisor meet together to talk over the program and its problems of presentation. These conferences might well be held on a weekly basis, certainly no less frequently than once a month. If possible to make such arrangements, the trainees should have two or three conferences a year with a person trained in physical education procedures.

Faculty discussion and study—The success of the physical education program is dependent upon the understanding and co-operation of the entire faculty of each school. It is suggested, therefore, that each secondary-school principal discuss with his faculty the manual, *Physical Fitness Through Physical Education for the Victory Corps*. Demonstrations by students of the activities in the manual should accompany these discussions.

Demonstration lessons—Whenever services of a trained person are available, the trainees should be given demonstration lessons in the various activities of the program. In some localities there are men and women who are expert in these activities. These individuals may be willing to volunteer their services for brief periods as demonstrators.

The activities given in the manual on *Physical Fitness Through Physical Education for the Victory Corps* should be properly demonstrated. If teachers are interested and are physically able, demonstration should be accompanied by active participation. If teachers do not participate, then student leaders should be present at the demonstrations and should participate in them under the teacher's supervision.

Financial Aid for Emergency In-service Training of Teachers

Traditionally, teachers themselves have borne the cost of professional training. Teachers trained in other fields are now being assigned to teach physical education. To be effective, they should receive special training in this field.

It is desirable that this cost be borne by public funds, preferably school funds. In many instances local laws and practices may not permit this. In such

cases private funds should be sought by the state, county, city, or local school authority as the case may be to achieve necessary in-service training. The appeal should never be on a personal basis but rather in terms of the objectives to be attained. The individuals to be trained should not be expected to account for such training to the donors. There are patriots who will train to teach; there are patriots who will provide the means; let the school authorities provide opportunities on the proper basis.

USING STUDENT LEADERS

Point of View

The use of student leaders in physical education has long been accepted as sound educational practice. Proper use of student leaders has proved one practical way to increase the effectiveness of teaching during the emergency. It can also be one of the soundest methods of giving laboratory experience in democracy, not only during the emergency, but at any time. Thus first emphasis may be placed on helping overcome the teacher shortage for the immediate emergency but at the same time steps should be taken to make the leadership program as educationally productive as possible as it continues in use.

Organization

The leaders should always work under the immediate direction of a faculty member. Such leaders should be carefully selected and trained for their work.

The first function of a student leader is to increase the effectiveness of the teacher by taking over responsibilities of group handling and instruction. There may be a class leader or captain, squad leaders and demonstration leaders in special activities. Some students have special facility in handling groups but may or may not be especially skilled in activities whereas other students may have outstanding ability in performance of certain types and should be the instructors for such activities. Gradation of responsibility may be desirable for effective class management.

Leaders should be given real status or prestige. They should not be errand boys or monitors. They should have certain privileges in return for their extra time and work. Every effort should be made to build pride in their work individually and as a group to develop ability, responsibility, and morale.

Selection

The success or failure of the student-leader program may depend upon the ability of the teacher and of the class to select students of proper qualification and to use their abilities to best advantage. The qualities needed by student leaders in physical education include:

1. Physical fitness
2. Dynamic traits which induce desirable action in others
3. The desire to be a leader in this field
4. A likable personality

5. Self-confidence, initiative, and "drive"
6. Skill in physical education activities
7. A constructive attitude
8. Readily adjustable to new conditions
9. A sense of humor
10. Intelligently persistent
11. Truly democratic in thought and action
12. Demonstrated ability as a leader in student activities

While all of these are desirable, all are rarely present in any one person. They can be developed but meanwhile certain phases of leadership may be carried out if the teacher supervises or directs wisely while building the broader program.

Selection of student leaders for service may be made: (1) by the teacher or faculty; (2) by the students; or (3) by a combination of the two. In any of these a careful study of essential qualifications should be made. Discussion with students regarding the qualities and responsibilities of leaders is an essential preliminary to the selection. The success of the student leadership program depends upon the understanding of principles of leadership and co-operation in carrying them out. The use of student leaders does not relieve the faculty members of their responsibility for the organization and operation of classes.

A continuous program should be used for developing potential leaders from the general class membership by a process of self-selection and a further program of training and development. Many of the qualities and skills of leadership are not inherent but can be developed. Every student should have full opportunity to develop these abilities.

Student leadership should not be a matter of imposed authority but rather a sharing of planning and responsibility for progress of the whole whereby those of recognized ability along certain lines are selected by the group as their representative to carry out necessary duties. It is not a matter of leader and follower but a real sharing by all with a representative of the group chosen to unify or co-ordinate the work of the group as needed for the class group.

Training

Teachers with little professional training in physical education will need the immediate help of a few intensively trained leaders who can assume, under direction, considerable responsibility for organizing and conducting the class. For this purpose several students should be carefully selected in advance to take the in-service training described above.

State Program

In each state this training program should use facilities and personnel of the colleges and universities and of recreational areas or other available train-

ing resources. Each school should arrange to send the designated leaders for the training period of a week or for three periods of two days each. They should be given school credit for this period and should have their expenses paid. When they return they may help train others.

In preparation for the training institutes two steps may be found helpful. These are: (1) the organization by the state department of education of a state committee on student leadership. This committee should complete specific and detailed plans for the promotion and operation of the training institute; and (2) conducting a laboratory or preliminary institute at the state university or some other suitable location for the training of faculty members who will have the responsibility for developing other training centers throughout the state. This institute should run for at least a week and should include high-school student leaders and adults who will conduct the institutes at the state teachers colleges and other points throughout the state.

The Program for the Student-Leaders Institutes

The programs that are planned for the institutes for student leaders should be described in detail as a guide to the persons who have the responsibility for their operation. These descriptions should state the following items concerning the institutes: (1) the purpose; (2) the period of time; (3) the daily program; (4) the organization of students for classes and other activities; (5) the content of the course; (6) the schedule of classes; and (7) the duties of faculty members.

Purpose—To train student leaders to help carry on the wartime program of physical education.

The daily program—The first daily session of the institute may well be held each morning at 9:00 o'clock with a flag ceremony or other patriotic feature. All squads should assemble together each morning for the opening ceremony. Classes should be held from 9:00 a. m. to 12:00 noon and from 2:00 p. m. to 4:00 p. m. daily; and from 7:30 p. m. to 9:00 p. m. on Monday, Wednesday, and Friday evenings. The evening classes may well include group singing, square dancing, and other recreational activities.

Each squad should meet with its faculty adviser each afternoon, except Saturday, at 4:30. At these daily meetings the work of the day should be discussed and plans made for the next day. Each squad should keep a written record of its discussion. There should be a faculty meeting each day at 8:00 a. m. The squad leaders, all of whom are members of the *Students Advisory Committee*, should meet each day at 12:15 p. m. with the Director of Instruction.

Organization of students for classes and other activities—The number of students who participate in each institute will vary but assuming a registration of 100 students, the group should be divided into twelve squads with an

average membership of about eight students. Each squad should have a squad leader, and assistant squad leader, and a faculty adviser. The squads should be organized on Monday. Squad leaders may be permanent or rotating as seems best.

The squad leaders should constitute a *Students Advisory Committee*. This committee should meet with the Director of Instruction each day at 12:15 p. m.* The purpose of this committee is to advise with the Director of Instruction and the faculty on institute matters of common interests. The committee should observe all the activities of the institute closely. At the time of the meetings the members of the committee may make suggestions concerning the program and operation of the institute. The faculty will give consideration to all suggestions made. Each squad leader should make a brief report of the meeting of his squad at 4:30 o'clock on the preceding afternoon. This committee should have a chairman and a secretary and a written record of the meetings should be kept.

Content of courses—The activity courses will be the same as for the teachers but with extra practice sessions for the purpose of acquiring skills. Work will also be given in leadership techniques. About three-fourths of the time of every class period should be devoted to the practice of activities, and about one-fourth of the time should be used for discussion of the organization, conduct, and safety factors of the activities.

Text—The suitable textbook for these courses could be the bulletin, *Physical Fitness Through Physical Education for the Victory Corps*. It is recommended that supplementary materials be used.

Dress—Every student and faculty member should be expected to wear clean and suitable clothes to classes. The recommended costumes for the activities classes are: (1) for men and boys—soft-soled shoes, trousers or shorts, and shirt of washable material; and (2) for women and girls—soft-soled shoes and play suit or slack suit. In most cases the students and teachers should be requested to bring these costumes with them from their homes.

Schedule—The schedule of classes should be definitely planned and strictly followed. The following form is suggestive of how the schedule and assignments might be arranged.

| <i>Classes or meetings</i> | <i>Place</i> | <i>Teacher</i> | <i>Squad or group</i> | <i>Time and dates</i> |
|----------------------------|--------------|----------------|-----------------------|-----------------------|
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Personnel of Instruction

Institute Director—The institute director should: (1) Have general charge and supervision of the entire program; (2) arrange the program; (3) provide facilities; (4) obtain the faculty; (5) promote attendance; (6) arrange the housing and feeding; and (7) direct the general organization and operation of the institute.²

Director of Instruction—The responsibilities of the director of instruction should include the following: (1) scheduling faculty meetings and presiding at these meetings; (2) assigning responsibilities to faculty members and students; (3) making arrangements for and presiding at general assembly programs; (4) assigning places for classes, assembly, and other meetings; (5) acting as adviser for the *Student Advisory Committee*; (6) arranging for certificates of awards to students who complete the course satisfactorily; (7) setting up a system of keeping individual records of the students; (8) arranging opening exercises; (9) supervising teachers; and (10) obtaining necessary supplies for office, class, and extraclass activities.

Faculty—The responsibilities of each faculty member should include the following: (1) organizing and teaching of classes assigned to him; (2) serving as adviser to squad to which he is assigned; (3) assisting with extraclass activities and special events as requested by the director; (4) observing students with special attention to the individual members of his squad; (5) attending faculty meetings; (6) keeping necessary records and making required reports; (7) providing and wearing appropriate clothes for classes and for all other special activities; and (8) obtaining necessary equipment and supplies for classes through the customary channels.

In-school leader training—In order to have squad leaders and performance or demonstration leaders, some special instruction to selected personnel will be necessary in each school. Some of this can be given by the skilled instructor during regular class time as squad-leader practice but should probably not be attempted by most untrained teachers.

The most common practice is the organization of a Leaders Corps or Club which meets with the teacher one or more extra periods a week as a special privilege for instruction. There may also be another group of novice leaders preparing for admission to the regular leaders group as junior leaders. Care should be taken in such program not to interfere with intramural and similar activities and to allow a wide spread in leadership opportunity.

²It may be necessary to combine the positions of Institute Director and Director of Instruction.

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Producing Royalty Plays

GEORGE H. GILBERT

Principal, Lower Merion High School, Ardmore, Pa.

SAVING money through lower royalty charges should appeal to every school administrator at the present time. For years the high royalties charged by all play producers have been a deterrent to giving good plays. Many schools have been unable to afford the plays they would like to give. Through co-operative work this situation has now been changed.

Five years ago a grant from the Rockefeller Foundation made possible an extensive survey of 4000 high school, college, and community theaters. Everyone wanted lower royalties. This project was to find whether relief could be found through co-operating with play producers, or whether the best line of action would be in having school people write their own plays or revise plays on which there was no royalty. After a great deal of investigation, it was decided that co-operative group buying offered the best hope of relief. Consequently a group of play producers was formed under the leadership of Professor Barclay Leathem of Western Reserve University, now operating under the name of the Royalty Project of the National Theatre Conference.

This project is like all co-operative schemes. A representative group meets each year to check the plays they wish included in the royalty project. These names are sent to anyone interested in play production. The sales of these plays increase to such an extent that the publishers are willing to quote reduced rates. At the present time this royalty project has the enthusiastic support of English teachers both in high schools and in colleges, and it also has the approval of people interested in the Little Theater movement. With the additional weight which might be given to it by members of the National Association of Secondary-School Principals, the royalty reductions might be even greater and the list of plays extended.

The procedure is very simple. A producer of a play writes to Professor Leathem giving him the name of the play he desires to produce, the name of the organization, and the dates when he would produce it. A service charge of \$1.00 allows the school to have as many plays included in this royalty project as it desires to produce in one year. Furthermore, if a school pays the service charge of \$1.00 and makes no use of it, the money is refunded. It is a case where the school may gain but cannot lose. The detailed list printed below shows the amount of royalty reductions available, most of them running \$5.00 or more for each performance. Every little saving makes possible a greater saving later on. Be sure to look over this list of plays before your school gives any dramatic performances.

Royalty to Groups Certified
For Reduction Through N.T.C.

| DRAMATISTS PLAY SERVICE | Catalogue Royalty | First Performance | Second Performance | All Others |
|------------------------------|----------------------|----------------------|-----------------------|---------------|
| *What a Life..... | \$25.00 | \$20.00 | \$20.00 | \$15.00 |
| *Stage Door..... | 25.00 | 20.00 | 20.00 | 15.00 |
| Heart of a City..... | 25.00 | 20.00 | 20.00 | 15.00 |
| The Little Foxes..... | 25.00 | 20.00 | 20.00 | 15.00 |
| *Seven Sisters..... | 25.00 | 20.00 | 20.00 | 15.00 |
| The Moon is Down..... | 25.00 | 20.00 | 20.00 | 15.00 |
| Heaven Can Wait..... | 25.00 | 20.00 | 20.00 | 15.00 |
| *You Can't Take It With You | 25.00 | 20.00 | 20.00 | 15.00 |
| The Patriots..... | 25.00 | 20.00 | 20.00 | 15.00 |
| The Man Who Came to Dinner | 35.00 | 25.00 | | 20.00 |
| *Arsenic and Old Lace..... | 50.00 | 35.00 | | 25.00 |
| Ladies in Retirement..... | 50.00 | 35.00 | | 25.00 |
| George Washington Slept Here | 35.00 | 25.00 | | 20.00 |
| Kiss and Tell..... | 35.00 | 25.00 | | 20.00 |
| Dark Eyes..... | 35.00 | 25.00 | | 20.00 |

| | Catalogue Royalties | First Performance | Each Additional Performance |
|-------------------------------|------------------------|----------------------|--------------------------------|
| Papa is All..... | \$35.00 | \$25.00 | \$20.00 |
| Old Acquaintance..... | 35.00 | 25.00 | 20.00 |
| Male Animal..... | 50.00 | 35.00 | 25.00 |
| Guest in the House..... | 35.00 | 25.00 | 20.00 |
| **Spring Again..... | 35.00 | 25.00 | 20.00 |
| *Our Town..... | 25.00 | 20.00 | 15.00 |
| Philadelphia Story..... | 50.00 | 35.00 | 25.00 |
| *Letters to Lucerne..... | 35.00 | 25.00 | 20.00 |
| The Walrus and the Carpenter | 25.00 | 20.00 | 15.00 |
| The Beautiful People..... | 25.00 | 20.00 | 15.00 |
| *The Late Christopher Bean... | 25.00 | 20.00 | 15.00 |
| *Death Takes a Holiday..... | 50.00 | 35.00 | 25.00 |
| Family Portrait..... | 25.00 | 20.00 | 15.00 |
| No Time for Comedy..... | 35.00 | 25.00 | 20.00 |
| *The Bishop Misbehaves..... | 25.00 | 20.00 | 15.00 |

*Plays especially recommended for high-school production.

**Subject to certain territorial restrictions.

SUGGESTED FORM

Request for Certification for Reduction in Royalty

Name of Organization.....

Address.....

Name of person applying for certification.....

Name of play for which certification is requested.....

Number of performances.....

Dates of performances.....

IMPORTANT: In order for the above request to be granted, this application must reach the National Theatre Conference, Western Reserve University, Cleveland 6, Ohio. ONE MONTH IN ADVANCE OF THE OPENING PERFORMANCE. The Service fee of \$1.00 should accompany this request.

NOTE: All questions about the Royalty Project should be addressed to the Central Office, National Theatre Conference, Western Reserve University, Cleveland 6, Ohio.

SECONDARY-SCHOOL ATTENDANCE THIS YEAR

(Continued from page 22)

4. The pupil-teacher ratio has remained somewhat the same in 1943 as it was in 1942. However, it would appear that schools have computed their pupil-teacher ratio on the basis of a complete faculty and not on the basis of actual number of teachers in the school on October 1, 1943, when the ratio was computed. Had this been done for 1943, there would have been a decided increase in the pupil-teacher ratio.

A study of these reports on pupil enrollments reveals some causes for the decrease in pupil attendance. Many factors might be listed but these few represent some of the major ones.

1. Past decreases in birth rates.
2. Pupils are attracted to employment because of the high wages paid as well as just the idea of having money of their own.
3. Pupils are entering the Armed Forces.
4. In order that schools may remain open, many teachers poorly qualified professionally are being employed on emergency certificates. As a result, in a number of instances, pupils have decided that, since instruction is of low quality, they might as well leave school and go to work.
5. In many instances, both parents are employed and, as a result, they have little time to be concerned about the progress of their children in school. Truancy and absenteeism have increased and eventually the work of some pupils has become so inferior that they become discouraged and leave school.

SUMMARY TABLE

| | Oct. 1, 1942 | Oct. 1, 1943 | % Age Decrease in Attendance |
|---|-------------------------------|--------------|------------------------------------|
| HIGH SCHOOL ENROLLMENT | | | |
| Boys | 2,947,000 | 2,708,260 | 7.5 |
| Girls | 3,195,000 | 3,077,500 | 3.7 |
| Total | 6,142,000 | 5,785,760 | 5.8 |
| TEACHERS | | | |
| Needed..... | 17% more than on Oct. 1, 1942 | | |
| New | 18% more than on Oct. 1, 1942 | | |
| Schools with adequate staff | 16% less than on Oct. 1, 1942 | | |
| Teacher-pupil ratio—about same as on Oct. 1, 1942 | | | |

Evaluating Stenographic Achievement

PUBLIC SECONDARY SCHOOLS, CINCINNATI, OHIO*

A STENOGRAPHY test was given by the Cincinnati Public School System last May to over two hundred twelfth-grade pupils who at the time were completing the advanced course in shorthand. The findings show that many pupils complete the advanced course in shorthand without acquiring sufficient skill to take dictation at a rate of 100 words per minute. In other words, they do not possess the degree of technical skill usually expected of a stenographer. These results have several implications for the teaching of shorthand.

Guidance procedures should be made more effective so that only those who have a reasonable chance of mastering shorthand are permitted to take the subject. Needless to say, the guidance in this connection should be based upon a careful study of the factors that are essential to success in shorthand.

The advisability of setting up an examining procedure through which pupils who are able to take dictation at given rates of speed will be granted an appropriate certificate of proficiency should be considered. Shorthand is a strictly vocational subject. Employers are justified in expecting that pupils who complete the advanced course are able to perform the work of a stenographer. The fact that many such pupils are unable to do this results in misunderstanding and criticism. Much of the difficulty would be eliminated by a plan under which only those who meet a given standard of proficiency are certified as being prepared to perform the work of a stenographer.

A systematic study of the factors which make for more effective shorthand teaching should also be made. This study should include an analysis of the types of pupils who enroll in shorthand classes together with a study of the instructional methods and materials which are most effective with each type.

During the coming school year commercial teachers of the Cincinnati Public Secondary Schools will be asked to assist in the development of a strengthened program of instruction in commercial subjects, particularly shorthand and typing. The results of the test will be useful in this connection.

The test in *Proficiency in Stenography* which was given near the end of last school year has been analyzed and a report of findings sent to principals and teachers of commercial subjects. The findings furnish a gauge of the effectiveness of instruction in stenography and provide some basis for planning its improvement, particularly in regard to the guidance of pupils and the setting up and application of clearly-defined standards of achievement.

The test was given to twelfth-grade pupils who were completing the advanced course in shorthand. It consisted of four business letters, totaling approximately 500 words, dictated to the pupils by means of a phonograph rec-

*This material appeared in the September, 1943, issue of *Better Teaching*, a monthly publication by the Cincinnati Public Schools in connection with the development of the instructional program under the editorship of G. H. Reavis, assistant superintendent of schools.

ord at an average rate of 100 words per minute. Following the dictation, pupils were given thirty-five minutes in which to make typewritten transcripts.

The transcripts were scored on the basis of a uniform procedure according to which only letters containing less than ten per cent of the estimated total of possible errors were considered creditable. Letters containing more than this proportion of possible errors were marked zero.

Table I. SCORES ON STENOGRAPHIC PROFICIENCY TEST

| Score on Stenography Test (No. of Creditable Transcripts) | PER CENT OF PUPILS | | | | Total |
|--|--------------------|--------------------|--------------------|--------------------|-------|
| | School "A" N=61 | School "B" N=47 | School "C" N=86 | School "D" N=53 | |
| Four | 41.0% | 31.0% | 31.4% | 3.8% | 27.9% |
| Three | 13.1% | 25.5% | 17.4% | 5.7% | 15.4% |
| Two | 18.0% | 12.8% | 26.7% | 1.0% | 16.6% |
| One | 8.2% | 14.0% | 14.0% | 20.7% | 14.2% |
| None | 19.7% | 14.9% | 10.5% | 67.9% | 25.9% |
| Median of Scores | 3.31 | 3.39 | 2.96 | Below 1.0 | 2.60 |

A summary of the scores achieved by the pupils in the four comprehensive high schools as given in Table I shows, for each school, and all schools combined, the proportion of pupils who produced "four," "three," "two," "one," and "no" creditable transcripts, respectively. It will be noted that 27.9 per cent of the pupils produced creditable transcripts for all of the letters dictated; however, an almost equal proportion, 25.9 per cent, failed to produce any creditable transcripts of the letters dictated, *i.e.*, each of their transcripts contained more than ten per cent of the possible errors. It is evident from this that there is wide variation in the stenographic proficiency of pupils who complete two years of shorthand.

Individual schools also vary widely in the proficiency of their pupils. Thus in School "A," 41 per cent of the pupils produced four creditable transcripts, whereas School "D" produced 3.8 per cent.

In order to secure information on the probable cause of this variation, an attempt was made to secure data on the pupils' general scholastic ability. Scores were secured on an English test given March 1941, approximately two years before the stenography test and shortly before these pupils began their study of shorthand. A comparison between the scores on the two tests shows that those who made high scores on the stenography test had also, as a rule, made high scores on the English test, two years earlier. Similarly, those with low stenography scores made low English scores. A separate tabulation and comparison by schools of the two sets of scores suggests a similar conclusion.

Table II.

| School | Median of Scores on Stenography Test | Median of Scores on English Test |
|------------|---|---|
| School "A" | 3.31 | 94.0 |
| School "B" | 3.29 | 91.0 |
| School "C" | 2.96 | 81.0 |
| School "D" | Below 1.0 | 74.8 |

It seems clear from these data first, that not all of the pupils enrolled in

the classes in advanced shorthand can meet a uniform standard of stenographic proficiency and, second, that the same level of achievement cannot be made by all schools. In other words, the achievement expectancy set up for individual pupils and individual schools should be based in part upon the potential ability of the pupils to succeed in the subject.

It is possible on the basis of the test findings to make an estimate of the extent to which pupils who complete the advanced course in shorthand meet vocational standards. In this connection, the pupils who produced three or four creditable transcripts of the four letters can justifiably be regarded as being able to take dictation at 100 words per minute. (This conclusion is further justified by the fact that the test was given approximately three weeks before the close of school.)

Since 43.3 per cent of the pupils produced three or four creditable transcripts—and since several superior pupils who were not tested because they had already left school to take positions would presumably have done well on the test had they been present—it seems reasonable to conclude that about fifty per cent of the pupils who complete the advanced course in shorthand can take dictation at a rate of 100 words per minute. The remaining fifty per cent are unable to take dictation at this rate, but the group probably includes many pupils who can take dictation at rates somewhat less than 100 and could with some additional practice bring their speed up to 100.

Developing Methods of Visualized Instruction

FLORENCE M. BROWN AND L. S. METCALFE

The "Eye" School, Detroit, Michigan

TO IMPROVE methods of visualized instruction in the rapidly expanding war-teaching film program in the schools, there has been recently opened in Detroit a model schoolroom fully equipped for experimental purposes, and known as the Eye School No. 1.

The school was originally established to provide a discussion center for teachers, the direct users of visual aids. It was soon found, however, that increased use of visual aids in today's schools has increased the problems of their proper and most effective distribution and use. In this, as in other fields, it became the duty of the administrators to take the lead in trying to solve some of the problems involved. One of the first groups, therefore, to make use of the Eye School was composed of supervisors of instruction of the Detroit Public Schools.

The school itself is extremely flexible in nature and might better be described as a "clinic," as it is conducted on a group-discussion basis and

the pupils themselves are the teachers. The principal contribution of the host organization is to serve as a clearing house of ideas and to put at the disposal of the clinic members information assembled over a period of years on film utilization in the industrial and business world. Ever alive to the changing requirements of a changing world, secondary schools are today, more than ever, interested in adopting for their own use methods of instruction that have proved effective in other fields. They, in turn, have a great deal to offer industrial trainers to help them train the thousands of new workers that are needed in industry today. It is this fruitful exchange of ideas that will justify the effort that has gone into the establishment and continuance of the Eye School and its successors.

Meetings are held in a schoolhouse constructed of stage-scenery "brick" (all of non-priority, non-vital materials) in the Jam Handy Company's Detroit office. The blackboards, chairs, desk, projectors, storage space for slidefilms and motion pictures, and the screen, are real enough, however, and are in almost constant use for demonstrations. Every effort has been made to set up ideal conditions for film use, as they can be adapted to the requirements of the average schoolroom. The projectors are installed on movable stands with storage space for the films in current use just below. Electrical outlets and switches are conveniently near by. The size of the screen was carefully selected for the size of the room, and it is permanently installed at the proper level. Provision for darkening the room has been kept as simple and convenient as possible. One of the most noticeable characteristics of the room is the ease with which the visual aids can be effectively used. With the physical details thus provided for, it becomes a relatively simple matter for the teacher to make the best possible use of visual instructional material, without the annoying burden of minor distractions.

The first session of the "Eye" School was a clinic-discussion meeting on the subject of effective film usage. It was attended by the supervisory staff of the Detroit Public Schools and from this nucleus later meetings of teachers were scheduled. The subject was discussed under the broad headings of selection of films, utilization, projection, and supplementary uses. Illustrative slidefilms and motion pictures were used, from which a lively discussion developed as to the best means of supplying visual aids to classes at the times and with the frequency with which they are needed.

NEED FOR RESEARCH

Each school system seems to have evolved a slightly different way of handling the scheduling of visual aids. Many of these methods have, like Topsy, "just growed," but not at a pace commensurate with the demand. It seems to be the opinion of those responsible for the effective use of instructional materials in an expanded curriculum that a close examination of handling methods is a necessary concomitant of increased use. Shall visual

aids be used only in the auditorium, or some other central place, or shall they be shown in the classroom? Should they be borrowed from a school-system agency or should they be always at hand, easily available to the class which uses them? Who shall be responsible for and who shall operate the projectors? How can the teacher best be relieved of the mechanical details of scheduling, previewing, showing, and other questions? These are all questions on which a large backlog of varied experience should prove valuable. It is hoped that the "Eye" School can play a helpful part in accumulating and disseminating this information.

One other way in which the school can serve is as a depository of ideas on subjects for future production of visual aids. Principals, superintendents, and supervisors have an exceptional opportunity to have an over-all view of the requirements in various subject fields for instructional material. They can, therefore help secure the visual material they need by keeping the producers informed of their needs.

Among the materials developed for use in the "Eye" School is a slide-film entitled "Tips on Slidefilms" and a manual, *Thoughts on Effective Film Usage*. The slidefilm is divided into the following subjects: Preparation of the Classroom, Use of Projector, Use in Classroom, Use in Workshop, and Use as a Reference Library. It can be presented in its entirety or in sections, as the occasion requires. Other materials are in the process of development and various suggestions have been advanced by those attending the group meetings for others, such as workbooks, examination questions, and the like.

There is every evidence that teachers and administrators are not only cognizant of the possibilities inherent in the informal organization of the "Eye" School but that they have suggestions and ideas to advance that will be put into effect as rapidly as possible. In this way the school can become a useful base for experimentation in a rapidly expanding field as well as a clearing house for ideas.

FIRST RESULTS OF THE PROJECT

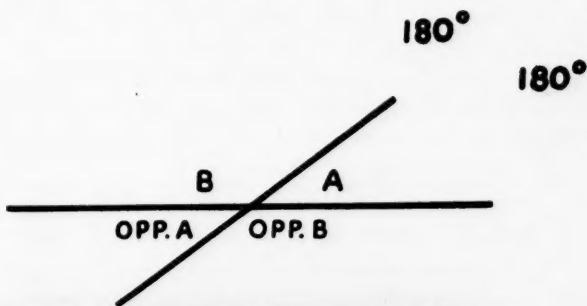
The first visualization of basic mathematics by means of the slide-film screen arising out of this experimentation and study has been made available to schools and colleges, in the form of 24 subjects with a total of 1,087 individual pictures—special photographs, drawings, charts, diagrams and pictorial exhibits. These are of the "reading" or discussional type, and provide:

1. New material for direct teaching
2. For reviews
3. Aids for examinations, and re-teaching in regular mathematics classes—arithmetic, algebra, geometry, and trigonometry.

Each of the 24 subjects lends itself readily to presentation in sections or by units, or more important yet, to class presentation in which the immediate emphasis is on the functional use of number skills. In brief, this series has been

designed to help the instructor reduce twelve years of elementary and high-school mathematics to its simplest basic elements, so that the creative application can be made in any vocational field. The vitally important part which mathematics has been and is taking in vocational teaching, particularly in the wartime programs in skills and crafts instruction, is recognized by instructors everywhere.

This material has been arranged and classified on the basis of content. Subjects are as follows: *Kit I. Arithmetic*—Five Keys to Math, Addition and Subtraction, Multiplication and Division, Fractions, Decimals, and Percentage, Addition and Subtraction of Fractions, Multiplication and Division of Fractions, Square Root and Cube Root, and Order of Operations. *Kit II. Geometry*—Addition and Subtraction in Geometry, Multiplication and Division in Geometry, Angular Measurement, Constructions, Scales and Models, Vectors, and Trigonometry. *Kit III. Algebra*—Positive and Negative Numbers, Ratio and Proportion, Exponents and Logarithms, The Arithmetic of Algebra, Equations and Formulas, and Problem Analysis. *Kit IV. Graphs*—Graph Uses, Plotting Graphs, and Analytic Geometry.



Now if

$\angle A + \angle B = 2$ right angles

and

$\angle A + \angle \text{opposite B} = 2 \text{ right angles}$

then . . .

$\angle B$ must = \angle opposite B.

—Courtesy Jam Handy Picture Service

A slidefilm use in Geometry instruction.

The New in Physical Fitness for School Youth

Two new manuals, *Physical Fitness through Health Education for the Victory Corps*,¹ and *Handbook on Physical Fitness for Students in Colleges and Universities*,² have recently been prepared by the U. S. Office of Education, Federal Security Agency, to advance the nationwide drive for physical fitness of youth.

The first, *Physical Fitness through Health Education for the Victory Corps*—a companion manual to the earlier *Physical Fitness through Physical Education for the Victory Corps*³—purposes six major health objectives as a basis for a wartime emergency program of health education in high schools. The six aims are: (1) correction of remediable defects, (2) prevention and control of communicable diseases, (3) improvement in nutrition, (4) prevention of accidents and training to assist in giving emergency care, (5) program planning for balanced living, and (6) development of sound mental attitudes. The manual is meant to be suggestive rather than prescriptive and was issued in co-operation with the Committee on Physical Fitness, Federal Security Agency. It was prepared by a special committee including representatives of the Army, Navy, U. S. Public Health Service, U. S. Office of Education, teachers of health education, and other specialists.

The second manual, *Handbook on Physical Fitness for Students in Colleges and Universities*, likewise prepared by a committee of specialists, in co-operation with the Committee on Physical Fitness, suggests programs of physical education activities for college men and women in preparation for their probable war tasks. It also outlines a program for health. Both programs have been approved by representatives of the Army, the Navy, and the U. S. Public Health Service.

These two new manuals and the first publication³ on physical fitness programs are strongly recommended for all teachers of health and physical education in all secondary schools. Dr. John W. Studebaker, U. S. Commissioner of Education, states, "Physical fitness may mean the difference between life and death for men entering the Armed Forces. Physical fitness is also of the utmost importance to men and women who participate in industrial and agricultural programs." The drive for physical fitness being carried on in the nation's schools, started immediately after our declaration of war, was intensified with the announcement made by Selective Service that surveys showed approximately 25 per cent of 18-19-year-old registrants were physically unfit for regular military service. Leading causes of rejection are chartered on the

¹*Physical Fitness through Health Education for the Victory Corps*. Washington, D. C.: Supt. of Documents. 20 cents. Pamphlet number 3 in the Victory Corps series.

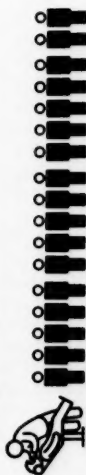
²*Handbook on Physical Fitness for Students in Colleges and Universities*. Washington, D. C.: Supt. of Documents. 25 cents.

³*Physical Fitness through Physical Education for the Victory Corps*. Washington, D. C.: Supt. of Documents. 25 cents. Pamphlet number 2 in the Victory Corps series.

HEALTH NEEDS OF YOUTH

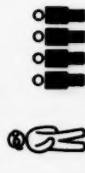
SHOWN BY NYA EXAMINATIONS-1941

AMONG EVERY 100 YOUTH EXAMINED



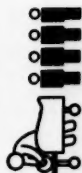
85

NEEDED DENTAL CARE



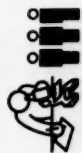
20

NEEDED REFRACTIONS



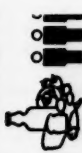
19

NEEDED TONSILLECTOMIES



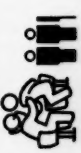
14

NEEDED ADDITIONAL DIAGNOSTIC PROCEDURES



12

NEEDED SPECIAL DIETS



11

NEEDED STUDY BY A SPECIALIST

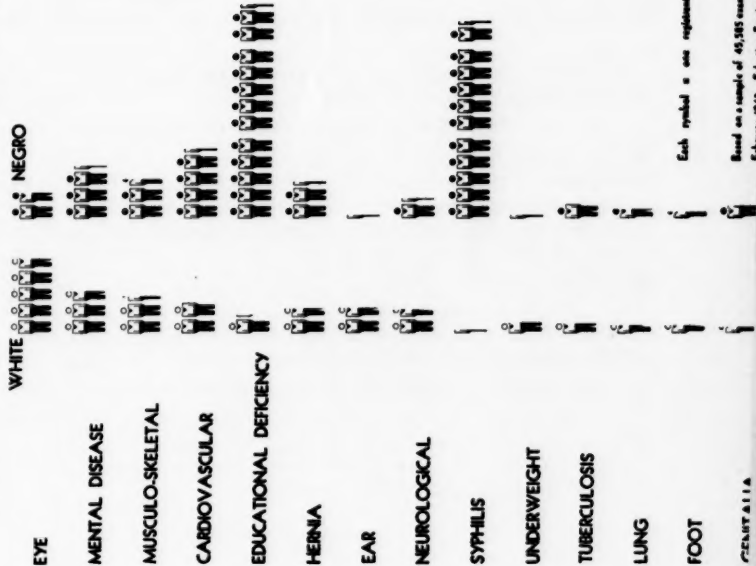
EACH REPRESENTS 5 YOUTH

MAJOR CAUSES OF REJECTION AMONG

18 - 19 - YEAR - OLD REGISTRANTS

GENERAL MILITARY SERVICE

Number of rejections per 100 white registrants examined compared with rejections per 100 Negro registrants



Each symbol is one registrant

Based on a sample of 45,995 examinations
February 1942 - October 1942

GENERAL MILITARY SERVICE

accompanying pictographs, two of the many illustrations in the new manual, *Physical Fitness through Health Education for the Victory Corps*.

Since the publication of *Physical Fitness through Physical Education for the Victory Corps* in the fall of 1942, 31 states have adopted wholly or with modifications the plan for physical education outlined in it. In many schools, physical education classes are now held five times a week instead of two or three. It is recognized that physical fitness is necessary for satisfactory service on the home and factory front as well as in the Armed Services, according to leaders in both fields. A physically fit person is one who is free of handicapping infection, disease, or defects; is properly nourished, practices wholesome mental hygiene; and possesses sufficient strength, endurance, skill, and knowledge to perform daily activities successfully. One of the serious hindrances to an all-out fitness effort has been the shortage of trained teachers in this field, schools report. Use of trained student leaders has been found of great value. Several methods of meeting this shortage are suggested in "Meeting Teacher Shortage in Wartime Physical Education," appearing as another article on pages 65-76 of this issue of *The Bulletin*.

News Notes

CRITICAL THINKING—While most educators in a democratic society agree that one of the primary objectives of public education is to develop ability to think critically and reason logically, there nevertheless are very few instruments available at present which can evaluate the extent to which students have achieved the attitudes and component abilities involved in critical thinking. The *Watson-Glaser Tests of Critical Thinking*, published by the World Book Company, have been designed to measure a considerable number of the important abilities involved in critical thinking. The tests are arranged in two batteries, each consisting of a booklet of four tests. Battery I, "Discrimination in Reasoning," contains a test, each on Generalizations, Inferences, Discrimination of Arguments, and Recognition of Assumptions. Battery II, "Logical Reasoning," contains a test, each on General Logical Reasoning, What Do You Think?, Survey of Opinions, and Applied Logical Reasoning.

There is evidence that the abilities measured by these tests of critical thinking are not nearly so closely related to the abilities measured by intelligence tests as one might expect. These tests offer a means for obtaining quantitatively as well as qualitatively a measure of the student's ability to think critically with regard to problems involving interpretation of data, drawing inferences, making warranted generalizations, discriminating between strong and weak arguments, recognizing unstated assumption in reasoning, and other aspects of critical thinking. The test results may also be useful in evaluating a local curriculum, the relative efficacy of different methods of instruction which are intended to develop the ability to think critically. They may be used as a source for classroom instruction, for individual guidance, and remedial teaching and additional evidence for evaluation of intellectual growth and development.

ENJOYING THE ARTS—In its latest publication, *Teachers Enjoy the Arts* (viii 58, pp., paper bound, fifty cents with quantity discounts), the Commission on Teacher Education. The American Council for Education (744 Jackson Place, N. W., Washington, D.C.) is concerned with appraising what informal art activities can mean to classroom teachers and school administrators who are neither artists nor art educators. The report is based primarily on extensive interviews, supplemented by questionnaires, with 126 persons working in three of the public-school systems that have been associated since 1939, in the Commission's nationwide co-operative study of teacher education. Their very frank and illuminating statements are heavily drawn upon in the discussion, for the most part in their own words. They make clear how much and in what ways they enjoyed the programs in art, music, and dancing that were provided for them at summer workshops. After an introductory chapter on "art and the average teacher," the report takes up the "range and emphasis of the art work" offered in the specific programs studied, and then presents "some of the outcomes" under the following subheads: self-expression and personal growth, sociability and human relations, the effects on teaching and some individual cases. The pamphlet concludes with "reflections on the findings," in which the accumulated testimony is weighed, the original concerns or objectives of the Commission in this area are examined, and suggestions are offered for the guidance and extension of similar programs in the future.

HANDBOOK FOR TEACHERS OF SPANISH AND PORTUGUESE—A "Handbook on the Teaching of Spanish and Portuguese" has been prepared by a group of specialists with headquarters in Study Room 243, Library of Congress Annex, under the sponsorship of the American Association of Teachers of Spanish. Funds for the project were provided by a grant made to the Association by the Office of the Co-ordinator of Inter-American Affairs, and the Library of Congress generously provided quarters for the project. The handbook is approximately 200 pages in length and includes information on the best sources of teaching aids and materials for the study of Spanish and Portuguese, the history and present status of the teaching of Spanish and Portuguese in the United States, vocational opportunities for students who have mastered one or both of these languages, and a description of intensive and other new methods of teaching the languages, and other recent developments in the field. It is hoped the completed work will not only serve as the "bible" of teacher of Spanish or Portuguese here, but that it will serve to convince our Good Neighbors of the other Americas that serious efforts are being made to expand and develop opportunities for young Americans to learn Spanish and Portuguese. The director and editor-in-chief of the Handbook is Dean Henry Grattan Doyle of The George Washington University, who is on leave from the University to direct the Washington Inter-American Training Center, another project of the Office of the Co-ordinator of Inter-American Affairs, administered by the American Council of Learned Societies.

BOOKS ON TECHNICAL AND MECHANICAL SUBJECTS—A new publishing organization, **ESSENTIAL BOOKS**, has been formed to publish a comprehensive line of popular books on technical and mechanical subjects. Countless men and women, who have never enjoyed the advantages of technical or college training, have been forced to seek information along technical and mechanical lines, because of great recent changes in industry. After several months of investigation and consultation as to the type of books needed for the industrial worker and the young man or woman who wants to enter the industrial field, **ESSENTIAL BOOKS** has planned a program of 41 titles to be published within the next 18 months. These books will

be produced in the most economical war-time format-hardbound and mostly $4\frac{1}{2}$ " x $6\frac{1}{4}$ " and will be listed in the \$1 to \$2 price range.

It is the aim of ESSENTIAL BOOKS to produce a series of books within the price range of every person who seeks knowledge on any specific subject so that he can equip himself for a place in the rapidly expanding industrial world of today and tomorrow. The books will be written in as simple a manner as the subject will allow, eliminating, wherever possible, technical theories and mathematical equations, but will present the basic facts so that the person of normal intelligence and an ordinary school education will be able to grasp them. It is the intention of ESSENTIAL BOOKS to rely largely on existing trade outlets for the marketing of their books; a liberal discount schedule is planned so that the trade will be able to take advantage profitably of this new mass market. ESSENTIAL BOOKS will have their offices with Duell, Sloan, and Pearce, 270 Madison Avenue, New York, who will also act as distributors of ESSENTIAL BOOKS. Among the first titles to be published in the fall are: *Aircraft Engines* (\$1.25), *Aircraft Instruments* (\$1.25), and *Aircraft Welding* (\$1.25), each by Emanuel Stieri and *New Standard Year-book* (\$2.00) edited by Charles Earle Funk.

A DICTIONARY OF EDUCATION—The work on *The Dictionary of Education* being prepared by PHI DELTA KAPPAN is now in its final stage. The editorial work will soon be completed. No fixed date for publication has been set by McGraw-Hill Book Co., because of the uncertainties of war conditions. However, it is expected that the Dictionary will be available in 1944. Fortunately, the validity of carefully formulated definitions is not affected by the passage of a few months, which makes a possible delay in publication of no great consequence. Clarification of concepts and uniformity of terminology are essential to the planning of an adequate educational program, preparation of future teachers, in-service improvement of experienced workers, and interchange of information. The *Dictionary of Education*, as an example of co-operative effort and through its content, should make a contribution toward such ends, not only for education in the United States, but also for the schools of Canada, England, France, Germany, and Italy, whose principal terms in comparative education have been defined.

NEW RECORDINGS FOR SCHOOLS—The Recordings Division of the American Council on Education has been added to the New York University Film Library, Recordings Division, 152 West 42nd Street, New York. This Division will continue to make available to schools, colleges, and discussion groups recordings on educational subjects, to evaluate recordings offered by various agencies, to encourage the production of educational recordings, to advise teachers and discussion group leaders about recordings to use in their programs, to prepare and distribute carefully selected lists of educational recordings, and to fill orders for them. This library now has more than 1000 recordings on social and economic problems, literature, languages, history, and science, for enrichment of class and group discussion.

FREE GUIDANCE PAMPHLETS—Counselors, deans, teachers, librarians, students, parents, and others interested in vocational guidance will find helpful material in a new list of 25 free pamphlets on 17 different occupations, including names and addresses of the publishers from whom the pamphlets may be obtained upon request. To get this list send 25 cents to Occupational Index, Inc., New York University, New York City.

THE SCIENCE OF CAMOUFLAGE—The story of camouflage, the theory, the practice, the future of protective concealment, is vividly portrayed in a series of slides distributed by the Harmon Foundation, Inc., 140 Nassau Street, New York, N. Y. Its employment by nature as concealing coloration, by primitive peoples as a pro-

tective device, and by modern armies as a scientific defense is shown in this group of kodachrome slides with a cued narration. It is a set of approximately 75 kodachrome slides. With it is a script that is cued to the slides, clarifies, and extends their meaning in the study of camouflage, and gives valuable reference information. The script and the pictures will bring to students in an orderly and convincing manner the several scientific theories involved in camouflage and its use by the Army and the Navy—in the air, on the land, and on the sea. This visual treatment presents a comprehensive history of camouflage from primitive times to our own day.

The slides visualize the use of optical deception in nature. They show how primitive peoples developed the science of camouflage. Historic pictures reveal that camouflage was practiced by the Trojans, by Robin Hood and his merry men, by the British redcoat in his dazzling uniform, by the Confederate Army, and so on up to the present time. They explain the theory of related colors, disruptive pattern and counter shading. They demonstrate the effect of the dazzle system in the painting of ships against the attacks of undersea boats and show how three dimensional concealment is effective in defending against attacks from the air.

These slides may be rented or purchased outright. Rental (basic rate \$10.00) includes the use of the slides and the cued script for one booking by one renter. Rates are based on one use on one day. For additional showings on successive days, the charge is one-half the original price. One week's rental is three times the base rate; for two weeks, five times and for one month, seven times the original fee. Transportation charge to the booker is included. Lifetime leases of slides will be made to colleges, schools, school systems, film library associations, museums, and like organizations for their exclusive use—not to be rented or copied. Replacements for damaged slides will be made at cost plus a handling charge upon the return of the damaged slide. Lease is tantamount to sale and includes the cued script. The price per set is \$75.00. All orders should be sent to Division of Visual Experiment, Harmon Foundation, 140 Nassau Street, New York, New York.

A TALK FOR SCHOOL ADMINISTRATORS—As leaders of youth groups, school administrators are concerned today about the kind of ideas and ideals that are to be inculcated on the minds of the young people under their supervision. Youth are naturally vastly interested in the exciting events taking place around them, and in the part they themselves are to play in the world of tomorrow. They are modern, ambitious to go forward, but their questioning minds make them highly receptive to influences whose roots go far back to events and people of the past. These young people can be told about many illustrious figures in the history of this country, whose ideas and ideals contributed much to its growth, and to their own personal growth, but it is generally conceded that Benjamin Franklin stands out among them as the most practical master of life. His is probably the first great American success story. He is the only statesman in the history of this country who also distinguished himself in the field of science. The ideas and ideals that motivated him in the scientific field alone are worthy of prolonged study by modern youth.

The National Franklin Committee (organized by The Franklin Institute in Philadelphia, to make present generations more conscious of Franklin) has prepared a talk, specially written for youth groups, called "Remembering Benjamin Franklin." This is available to school administrators free of charge, upon request, as is also other background information. Write to William M. Vermilye, Chairman of the National Franklin Committee, Benjamin Franklin Parkway at 20th Street, Philadelphia 3, Pa.

A PICTURE OF WORLD AFFAIRS—Most people in England and in America are heartily sick of propaganda of every kind and would be thankful if they never heard the word again, although unfortunately we have to recognize its value as a weapon of war. On the other hand, an intense desire for more information has made people want two things: first, more intimate details about what is happening in the world; secondly, a complete appreciation of the position which faces us. The newspapers give us day to day flashes; periodicals and magazines give us the views of eminent persons. But we want more than this. As an attempt to meet this demand, an English organization is providing a periodic service. The whole object of this work of reference is to give a picture of great affairs as they appear to observers who have pretty good facilities for watching events in different parts of the world. An attempt is made to give a thorough straightforward description of what is happening and a clear idea of what the best observers think is going to happen in the future.

In Britain it is taken by over 200 Members of Parliament, many Government departments, many of the higher military, naval, and air commanders, libraries, and business houses. In the Dominions it has a wide circulation in the official world and elsewhere. In the United States it is taken by many of the best known universities and leading citizens. The North American edition is cabled across the Atlantic each month and is then made up, published, and distributed by J. M. Dent & Sons (Canada) Limited of Aldine House, 224 Bloor Street West, Toronto, Canada. The cost in U. S. is \$10 per year. Orders should be made direct to J. M. Dent & Sons, Toronto, Canada.

VERMONT HIGH-SCHOOL GIRLS TRAIN AS CHILD-CARE AIDES—Ready to serve as volunteers in emergency war services to assist the State Council of Safety are groups of school girls throughout Vermont. Already 34 high schools in the state have reported organization of play schools and the completion of a training period preparing girls for wartime services as child-care aides. The course was designed and incorporated this past year in the curriculum of the homemaking division of the Department of Education.

In some high schools the girls are enrolled in the community-service division of the High School Victory Corps; in others they are members of the Citizens-Service Corps of Vermont. Those who have qualified as child-care aides are registered as volunteers with the local Civilian Defense volunteer office, and are entitled to wear the insignia of the Citizens-Service Corps of Vermont.—*Civilian Front*.

DR. PAUL R. MORT REPORTS—Schools staffed by teachers specialized, but more broadly educated than is now the case, must be the post-war aim of our educational system declared Dr. Paul R. Mort, Professor of Education at Teachers College, Columbia University, in an editorial in the June issue of *School Management* magazine. "Teachers in any school should be able, with a minimum of extra work, to get ready for new tasks," Dr. Mort declares, "just as well as experienced teachers today of languages or social studies are finding it possible to shift into pre-induction training of high-school boys. This may demand changes in our certification laws." Dr. Mort expresses his conviction that vital home rule in education must be restored and our educational staffs must be made capable, through experience and training, to make adjustments in day to day decisions. "Hardly otherwise," he declares, "shall the public-school system be able to carry the heavy loads that must be carried if the Nation is to survive." He urges that local needs not only be recognized locally, but supported locally. Though Federal funds make it possible for schools to carry heavy loads safely and change direction quickly, he believes that "not more than a small percentage of the actual needs today and in the

post-war world will be discernible by persons who are viewing the scene from a national vantage point. "To adapt our schools," says Dr. Mort, "we must have better financial support than we now have in 85 per cent of the schools in America, support that will not only draw more able persons into the teaching profession, but support that will enable those now in the profession to continue their education and to broaden their experience through travel and reading and cultural contacts. Studies of returns for money spent continue to pile up evidence that the financial level on which schools are operated is reflected in the effective mental calibre of the professional staff."

CONSUMER EDUCATION STUDY ACTIVITIES—Dr. Fred T. Wilhelms, Assistant Director of the Consumer Education Study, has made an extended tour of western cities, where he observed the work of many teachers and conferred with leaders in the field. He visited Houston, Phoenix, Los Angeles, Long Beach, Santa Barbara, Berkeley, Hayward, Oakland, Salt Lake City, and Denver. The Administrative Committee of the Consumer Education Study met in New York early in November to hear a progress report from the Director. The Study now has completed several teaching units, which it is sending out for criticism and experimental use by teachers in the field. Schools wishing to co-operate in this way with the Study should write to the Director of the Study, Thomas H. Briggs, Consumer Education Study of the National Association of Secondary-School Principals, 1201 Sixteenth Street, N. W., Washington 6, D. C.

EDUCATIONAL RADIO LISTING SERVICE INAUGURATED—Inauguration of a monthly Educational Radio Program Listing Service to aid teachers throughout the nation has been announced by the Federal Radio Education Committee and the U. C. Office of Education of the Federal Security Agency. Twenty-seven network programs are on the first list which has been forwarded to all State superintendents of schools for distribution to local schools. Convinced that educationally valuable network programs are not being utilized fully, the Federal Radio Education Committee composed of 14 representatives of the radio industry and education urged that a list of "educationally significant" network programs be prepared and widely disseminated. Each network recommends educational radio programs for the Listing Service. On the basis of standards agreed upon, an Advisory Committee of four educators makes its selections. The list is then mimeographed and sent to the state departments of education with the caution that it can best be used as the basis for preparing state and local lists which include local and regional educational radio programs. The "three major considerations" agreed upon by the Advisory Committee as a basis for its judgments are:

Educational significance.—The program should present information, concepts, and opinions that are important to the maintenance and development of the democratic way of life. The program is also educationally significant if it builds a favorable attitude toward, or gives an appreciation of, our cultural, social, and ethical values.

Radio program quality.—The program should be well written, well produced, simply presented, and in good taste both from the standpoint of content and of sponsorship.

Instructional adaptability.—The program should lend itself to use by teachers for classroom instruction, both as to length of program and the time at which it can be heard. Instructional adaptability also considers organization of program content and its usefulness at different maturity levels.

POSTWAR JOBS—Counselors, deans, advisers, placement officers, librarians, teachers, parents, and students, who want to know more about postwar jobs, will

find helpful information in a series of Occupational Abstracts covering 10 occupations in which the experts expect employment to increase at just about the time when returning soldiers and dismissed war workers will be looking for new jobs.

Each abstract will cover postwar employment prospects, nature of the work, abilities and training required, entrance and advancement, earnings, number and distribution of workers, advantages and disadvantages, and sources of further information. The price of \$2.50 for the series. Orders may be placed with Occupational Index, Inc., New York University, New York City.

THE PUPIL WAR INVENTORY PLAN—The Massachusetts Board for the Promotion of Opportunities for Young People has provided a plan which will prove of assistance to high schools, especially as it relates to present conditions in the Armed Services, business, industry, agriculture, and other similar matters. In addition, the program called *The Pupil War Inventory Plan* will be of value in a future period of peace. Its basic instruments are a *Pupil War Inventory Blank* and a *Manual* for operating the Plan. Both of these are subject to such changes as may be indicated as necessary from the experiences of schools participating in the Plan. At present more than 10% of the Massachusetts pupils are being inventoried. These students come from a little more than 13% of the Massachusetts high schools. There are a number of schools which are using parts of the Inventory, others which are using the Inventory Plan completely but have not reported, and still others that are planning to start the new school year by operating the Plan. All in all the Massachusetts secondary-school administrators are very much interested in the Plan, so much so that at meetings of state representatives, the *Pupil War Inventory Plan* is being discussed with a view toward making it a permanent procedure for the schools which elect to operate it. Inquiries and comments relating to details of the Plan should be referred to Warren E. Benson, Supervisor of Guidance and Placement, Commonwealth of Massachusetts, Department of Education, 200 Newbury Street, Boston, Massachusetts.

RE-EMPLOYMENT RIGHTS—The re-employment rights of men and women who enter the Armed Services from private industry and the Federal government are provided for as follows: (1) a job of equal seniority, status, and pay for *all permanent* employees; (2) probationary status for employees on probation when they enlist or are called into the Service; (3) promotions and within-grade salary increases for those employees, who in the normal course of events would have gained promotions and salary increases, had they not entered the Armed Forces; and (4) another war-service appointment for those former Federal government employees who held war-service appointments at the time they entered the Armed Services, if they are discharged before the end of the war. No provision is made for employees classified as temporary. While there is no law compelling state agencies to conform to the above regulations, the Federal government has stated that it hopes public employees will be protected by a sense of justice for their like treatment on the part of their state agency employers.

HIGH-SCHOOL STUDENTS ABOUT TO BE INDUCTED—The academic training a young man has already received when he reports for induction into the Armed Forces not only decides largely what his immediate assignment will be, but also to a great extent the ultimate limits of opportunity beyond which he may not advance so long as he remains in the Service of his country. In discussing the courses the Navy wants inductees approaching draft age to have, Captain William C. Barker, U.S.N., has said: "The absence of a considerable background in these high-school courses subjects automatically the inductees to a serious handicap and in general would place him in effect in the unskilled group of just ordinary labor-

ers who would come out of the war without a trade or skill, without the competence so necessary to his successful transition back to civil life."

The Navy emphasized the need for courses in: (1) thorough physical conditioning of at least one hour per day and with emphasis on basic military drill and posture; (2) mathematics, the more advanced the better; (3) science, both physics and chemistry; (4) English composition; (5) public speaking, specially for those hoping to attain commissions; (6) mechanical drawings; (7) shop training in the manual arts; and (8) "Good Manners" because the prevalent rudeness and lack of respect for age and authority on the part of youth make for neither good officers nor valuable men. Every boy nearing induction age should have a copy of *Getting Ready for Induction* (10 cents, write for quantity prices) published by the National Association of Secondary-School Principals, 1201 16th St., N. W., Washington, D. C.

Esta Semana—This Week—For more than nine years the Mexican Government has been publishing a weekly magazine entitled, *Esta Semana—This Week*. This magazine does not only concern a traveler's use and point of view, but provides a varied, condensed, and interesting source of scientific information in its weekly articles, written by prominent scholars and scientists on such topics as archaeology; flora; ethnography, Mexican history; legend; art and typical industries of Mexico; places worth visiting in Mexico; Mexico's natural resources; fauna; and Mexican cooking. At present a collection of all the articles that have been published during the past nine years, classified in ten books on the above topics, is being prepared. These books are being published in fine editions and illustrations in English and Spanish in the same volume; that will also interest anyone learning Spanish. Information concerning the magazine, *Esta Semana—This Week*, as well as the 10 compilations mentioned above can be secured by writing, *Esta Semana—This Week*, Editor: E. Hurtado, Apartado Postal—P. O. Box 10404, Mexico, D. F.

AIR RAIDS OVER LONDON—*Bow Bells*, by Katharine Gibson, has recently been published by Longmans, Green & Co. of New York. This new telling of the story of Dick Whittington is in memory of Bow Church which was destroyed in one of the air raids on London. The author has made arrangements with her publishers that half the royalties, beginning with the advance and any future royalties, will be given to the Lord Mayor's Empire Air Raid Distress Fund to be used for the relief of London children.

OUR NEIGHBORS IN NORTH AFRICA—Designed as an aid to interpreting the military and political events which have taken place and are still taking place in North Africa today, "Building America," in its current study unit, *Our Neighbors in North Africa*, (Oct. 1943. 32 pp. 30c) presents a most timely discussion which sketches the historical and geographic background of that important region and stresses its strategic significance in a world at war. Sections of this study unit are devoted to an analysis of the military campaigns conducted by United Nations forces against the Axis in North Africa, from the see-sawing battles for Egypt to the final victory in Tunis. Included are brief but informative sketches giving political and geographic background of the whole continent as well as North Africa proper—Egypt, French and Spanish Morocco, Algeria, Tunisia, Libya, and Rio de Oro. A final section analyzes the complicated and paradoxical political situation in North Africa, and discusses that situation in relation to the whole policy of America's foreign relations. Maps and an abundance of photographs lend graphic interest to the text, help to visualize the region, and provide the needed background for an intelligent understanding of events in a vital area of the world.

This is a publication of the Department of Supervision and Curriculum Development, National Education Association, distributed by Americana Corporation, 2 West 45th Street, New York 19, New York.

THE PATHFINDER MAKES A NEW BOW—The well known weekly, *Pathfinder*, a publication dealing with world events, is now being sponsored by the publishers of the *Farm Journal*. The publisher hopes to keep its readers authoritatively informed on what is going on in the nation's capitol, and on the many other political, economic, and social phases of these fast-changing times.

DRAMATIZED RADIO-STYLED PATRIOTIC SKETCHES—The Ponca City, Oklahoma, Senior High School has for many years given much attention to the dramatic arts. In 1942, the graduating class composed and presented a pageant entitled, *The Rampart We Watch*. The 1943 graduating class used as their theme, *This is Freedom*. Both of these sketches are 30 minutes in length and are available to other schools at 75 cents each or \$1.30 for the two, with a picture of each set included. The first is a continuity for excerpts from American historical documents while the latter is a continuity for popular music. Woodson Tyree of the Senior High School has charge of the distribution of the sketches.

TRAVEL LETTERS—To know peoples of other countries today one must have the latest possible information. Teachers in social studies are constantly searching for intimate human-interest information about people, their homes, food, games, schools.

Travel Letters of Delaware, Ohio, have attempted to supply some of this needed information in a unique way—by a series of travel letters. The information contained in *Travel Letters* is furnished by men and women, who have been educated in the United States, and now live in the countries from which they write. This assures information based on a genuine understanding of the conditions in the country from which the letter is written. The continuity is edited into the letters by the *Travel Letters* editor. The letters are mailed weekly from Delaware, Ohio, on the same day each week. During the school year of 1943-1944 *Travel Letters* will produce four series of weekly letters, as described below.

1. *Oriental Series*: China, India, Australia, Netherlands East Indies. According to a recent survey of geography texts, only about 3% of the space has been devoted to the Orient. This Oriental series of *Travel Letters* will consist of 32 weekly letters. The content will deal with the lives of people in those countries. The war conditions will be discussed only in-so-far as compatible with national security and postal regulations.
2. *Spanish Edition of the Latin American Series*. These letters are now being written in Spanish for use in Spanish classes. The material for this Spanish edition of the *Travel Letters* comes from residents from parts of the world with which the letters deal. These weekly letters are first prepared for use in elementary social studies. After these first letters are carefully edited, they are translated into good idiomatic Spanish for advanced classes in Spanish. The letters are proving exceedingly popular because of the human-interest content which they contain.
3. *Latin American Series*. These letters contain information on the historical backgrounds of the Latin American countries presented in an interesting narrative style; on the transportation and communication in those countries, the stories of the Fathers of those countries, the history of the flags, etc.
4. *North American Series*. This series of 32 weekly letters will cover Canada, from Newfoundland to British Columbia, our own outlying possessions, and the distinct sections of the United States. There will be intimate first-hand

information about life among the New England fishermen, the coal miners, the tobacco growers, the mountain folks of the Southeast, the cotton growers, the tenant farmers, the oil-workers, the ranchmen, the Indians, etc.

While the vocabulary of all series is suitable for 5th and 6th grades, pupils of more advanced grades will enjoy reading these letters and secure much information. Orders for as few as 15 copies per week are accepted—all copies to be mailed to one address. These 15 copies per week may consist of letters from one or more of the four series. The price for 15-29 copies weekly is 70c per copy per year, 30 copies or more per week—65c per copy per year.

ARMED FORCES INSTITUTE TESTS—The United States Armed Forces Institute was established to provide off-duty educational and training opportunities for Service personnel. As a part of its educational program, the Institute established an Examinations Staff at the University of Chicago to prepare examinations which might be used to report the educational achievements and status of Service personnel to educational institutions at which these men and women may wish to establish credit.

The American Council on Education will serve as distributing agent for special forms of a series of tests of general educational development and of achievement in specific subjects, equivalent to the forms in use by the Armed Forces Institute. These alternate forms can be used by educational institutions in establishing their own norms to facilitate the fair evaluation of the educational experiences of return-Service men and women. In order to make these new tests widely available on a non-commercial basis, the Council will distribute the tests through the Co-operative Test Service, under the same general policies as those which govern the distribution of the Co-operative tests. The United States Armed Forces Institute tests will be particularly valuable in enabling institutions to avoid the danger of blanket credit for military experience which so frequently occurred after the last war. The purpose and use of these tests are more thoroughly described in the Council's publication *Sound Educational Credit for Military Experience*.

Tests now available are: **TESTS OF GENERAL EDUCATIONAL DEVELOPMENT: (College Level)** 1. *Correctness and Effectiveness of Expression*, 2. *Interpretation of Reading Materials in the Social Studies*, 3. *Interpretation of Reading Materials in the Natural Sciences*, and 4. *Interpretation of Literary Materials*. Subject tests are algebra, analytic geometry, and plane trigonometry. Each test is printed in a separate test booklet and requires a separate answer sheet. The test booklet may be used more than once, but an answer sheet is required for each person taking the test. The special answer sheets are designed for hand scoring, but all of the above tests except algebra and analytic geometry may be administered with the standard IBM answer sheets if machine scoring is to be used. Prices of the college level: Specimen tests are 25 cents each or all seven for \$1.50.

Tests to be published later are: **TESTS OF GENERAL EDUCATIONAL DEVELOPMENT: (High-School Level)**. 1. *Correctness and Effectiveness of Expression*, 2. *Interpretation of Reading Materials in the Social Studies*, 3. *Interpretation of Reading Materials in the Natural Science*, 4. *Interpretation of Literary Materials*, and 5. *General Mathematical Ability*. Subjects tests are English (12th grade), French (lower level for high school and college), first-year algebra, advanced algebra, plane geometry, physics, chemistry, American history, first-year book-keeping and accounting, first-year typewriting, first-year shorthand, and auto-mechanics.

PROBLEM CHECK LIST—Problem Check List, high-school form, and *Special Supplement on War Problems* has been developed by Ross L. Mooney, through the co-operation of Miles E. Cary and Dai Ho Chun at McKinley High School, Honolulu, Hawaii; John H. Herrick at Shaker Heights City Schools, Cleveland, Ohio; O. O. Ryer at Johnsville-New Lebanon High School, New Lebanon, Ohio; and Arthur W. Combs at Alliance Public Schools, Alliance, Ohio. The *Problem Check List* is composed of common problems of high-school students, carefully selected after extensive research. The student uses the list by making a series of 330 items of particular concern to him. The *Special Supplement on War Problems* allows the student to write freely on a personal problem created by the war. These tests provide an up-to-date picture of the personal problems of students; indicates directions for development of a guidance program; suggests content for orientation, home-room, and extracurriculum programs; stimulates curriculum changes better to meet the needs of students; implements guidance interviews; points out students in particular need of attention; reflects the morale of the student body; and provides stimulating human-interest material for motivating school and community action in behalf of the welfare of youth.

The average number of problems marked is thirty per student, with variations by communities and individuals. Ninety-five per cent of the students say they enjoy filling out the list. Two-thirds or more will probably write on the Supplement. Students appreciate the chance to express their problems. The Check Lists cost \$1.00 for twenty-five copies on orders of less than 500, and 75 cents for twenty-five copies on orders of 500 or more. The lists come *without* the Supplement which may be easily reproduced locally. A manual (approx. 100 pp., mimeographed) giving detailed descriptions of the background, procedures, and results to date on the Check List is available at 60 cents after February 1st. Forms have also been adapted for junior high school and college. Make orders payable to the "Ohio State University Press," but address all orders and communications to Ross L. Mooney, Bureau of Educational Research, Ohio State University, Columbus, Ohio.

BLITZ LANGUAGE COURSES—A 50 per cent speed-up in ability to understand and speak a foreign language is anticipated by the department of romance languages at Northwestern University, as a result of a unique program of language instruction instituted last fall. The new program, in which the traditional textbook is minimized, uses a combination of recordings played on a special phonograph and heard through earphones or loudspeakers, and short wave radio. Although recordings have been used before for supplementary work in the teaching of languages, Northwestern has introduced this learning-by-hearing system as the basis of instruction in all beginning romance language courses. With a special phonograph which permits control of speed and tonal quality, with earphones which give better reproduction and shut out extraneous noises and sounds, and with loudspeakers which magnify the voice and carry it into all parts of the room, the new program has already produced a marked improvement in pronunciation and ability to understand. Over a short wave broadcasting unit, which can be connected to a loudspeaker or ear phones, more advanced students get a practical application of conversation, pronunciation, and grammar by listening to broadcasts emanating from foreign countries and sent from the United States to Latin America and Europe.

The new auditory method is being used in Spanish, Italian, Portuguese and French classes. Some of the recordings are commercially made but most have been recorded in the laboratory of the School of Speech at Northwestern, using the

voices of natives of each country. A complete French textbook of 57 lessons has been recorded, using two male and two female voices in order to acquaint the student with voice and inflectional differences. The recorded text uses no English. Directions, vocabulary, and conversation are given in French and questions on the lessons are asked in French with pauses for student answers. Students enjoy their work more under the new system. In an experimental section the class period has been lengthened from the usual 50 minutes to 80 minutes, but there is no loss of interest or evidence of fatigue during the last half hour.

HIGH-SCHOOL MODEL AVIATION CLUBS—Many students in high schools throughout the nation are forming model aviation clubs. A number of national organizations have been formed to assist in the organization of these clubs as well as to supply aids and suggestions to them. The Academy of Model Aeronautics, of the National Aeronautics Association, 1025 Connecticut Avenue, Washington 6, D. C., has been established by model aviation leaders to advance all model airplane activities and to act as a clearing house for organized clubs and individual flyers. Functioning "of, by, and for the aero-modeler," the academy sanctions meets, affiliates clubs, appoints contest directors, recognizes records, licenses model flyers, issues insurance to contestants, and performs many other vital services. Schools may call upon them for any assistance needed in the field of model aviation. They are pleased to make available to schools any or all of the knowledge they have gained as the result of many years of experience in this activity.

This Association also publishes a monthly magazine entitled *Model Aviation* in the interest of model airplane building. The cost is \$1.00 per year for members of the Association.

EDUCATION IN PARAGUAY—Tucked away in an inner pocket of South America, cut off from the stimulating influences of international seaports, Paraguay faces unusual problems in her national educational system. And in spite of difficulties, they are being met. Greatest of her problems is that of language. Unlike other South American countries, the basic idiom of Paraguay is Guarani, an Indian language blended with Castillian—forceful, even blunt, expressive, colorful. Since Paraguayans of all classes are of mixed blood, it is natural that the Guarani character should be more easily expressed by its own tongue. The result is quickly apparent: In the cities the people speak both languages, but in the country the farmer classes speak only Guarani. It is ample and close to their hearts.

Under the law every child must attend school even in the most isolated areas, and so at the age of six the boys and girls come trooping into the nearest village for three years of schooling. That the children speak only Guarani at home while in school the teaching of necessity is confined to Spanish, is a complicating factor, resulting in some cases in little being learned; in other cases, children learn to read and write in one language, though they think and talk in the other. Paraguay's Minister of Education, Dr. Anibal Delmas, naturally finds this a hard problem to solve, for one cannot think of eliminating the Guarani language, yet book learning of any practical value is found only in Spanish. To eliminate the latter would be to limit education to a minimum and to cut off Paraguayans linguistically from their neighbors.

The school system of Paraguay is similar to that of other Latin American countries, i. e., five years of elementary school and five years of secondary school leading to a degree of "Bachiller." In the University the only degree offered is a doctorate and the time needed to earn it depends mainly on the application of the student, for there is no maximum.

Paraguayan education is going through a period of transformation. Because

of the obstacles to be overcome, progress may be slow, but the country now appears to be on the way to fulfilling the high standard set by the Minister of Education.—Morrill Cody, Cultural Relations Officer, Embassy of the United States of America, Asuncion.

MATERIAL ON CHINA—The United China Relief, Inc., 1790 Broadway, New York 19, New York, has quite a quantity of materials available for school use. This includes such free materials as a picture of Generalissimo and Madame Chiang Kai-shek, 11¾ x 14, and a colored United China Relief poster, 27 x 41, for posting on classroom walls and school bulletin boards; a 14-page picture-story by Madame Chiang on *China Fights Back*; reprints of articles from *Asia* and *Contemporary China* on Chinese Exclusion, useful for debates, short essays, or classroom speeches by high-school students; and films, records, and suggestions for domestic science classes on Chinese cookery. A book, *New Chinese Recipes*, is also available at \$1.25. United China Relief hopes to make possible the sending to school children in China, of a joint letter, typewritten on both sides of thin paper, from classes in the U. S. studying China. Cost, \$1.40 for round trip air mail stamps. *China Primer*, part of the *Pocket Guide to China*, prepared by the Army and Navy for personnel going to China, may be secured at one cent a copy.

AVIATION KIT—The United Air Lines, 23 East Monroe Street, Palmer House, Chicago, Illinois, has prepared a new aviation kit for junior and senior high-school teachers and students. This kit as on previous years, prepared for school use and sent free, will be found exceptionally helpful to teachers as well as fascinating to high-school pupils. This as well as other educational materials has been compiled by W. A. Wheatley of United Air Lines in co-operation with the other airlines at the request of Dr. N. L. Engelhardt of Columbia University, Director of National Aviation Education Research Project. As far as they are able, the airlines of the United States will gladly send to teachers, free of charge, this valuable source material to help them in their work of preparing American youth for the dawning air age. In many cases, however, the materials these days are limited in quantity and may be exhausted at any time. In the latter instance, other similar materials will be supplied if available. *Please do not ask any airline to send samples of all their materials.* Write to United Air Lines School and College Service for a copy of their leaflet entitled *Free and Inexpensive Educational Materials* from which selections can be made.

A SPECIAL LIBRARY SERVICE—The Paul Kollsman Library of the Institute of the Aeronautical Sciences, 1505 RCA Building West, 30 Rockefeller Plaza, New York City, has as its purpose to lend aeronautical books by mail to persons interested in aeronautical progress. It is endowed by a gift of \$65,000 and has over 7,000 different volumes on aviation. No money is required to become a member of the library, only references which certify to the person's responsibility. The minimum age is 18 years. Books are loaned for one week, without charge except for return postage in returning books, which is paid by the borrower. The Library aims to have copies of all aeronautical books. Periodicals, reference books, and rare books are not loaned.

"GOOD NEIGHBOR" STUDY PROGRAM POPULAR WITH CLUBS—Five thousand clubs in every section of the country have taken the "Good Neighbor Tour," a course study (No. 1) on the countries of Latin America prepared for women's clubs and other study groups by the Pan American Union, the international organization of the twenty-one American Republics with headquarters in Washington. The course of study takes the form of imaginary tour around the American Continent, visiting the principal cities and their attractions. The culture,

economies, and industry of the republics, their people and customs, and other related topics are fully presented.

For the coming year the ten volumes of documentary material offered to all groups registering for the course have been completely revised. A feature of the program is a seminar on some phase of inter-American relations. This year the volume containing the seminar material is devoted to the Americas and the war. It sets forth the basic principles of the inter-American system, the relations of the United States with the countries of Latin America, the participation of the Americas in the war, and the contributions that the countries of Latin America are making to the war effort.

The "tour" itself starts with Brazil, Uruguay, and Paraguay, with geographical and historical sketches of each with considerable space devoted to Uruguay's social welfare scheme. When it is remembered that this small South American country is among the world's leaders in social welfare provisions for its people, one marvels that the tiny republic has assumed such farsightedness in a field which only in recent years has received the attention of other countries.

Another volume is devoted to Argentina and Chile, with fascinating and colorful stories of native music and dances, folklore, festivals and fiesta, and Christmas customs. Also included is the story of the world-famous "Christ of the Andes."

In the program on Bolivia and Peru, club members will invade the Highland country of the snow-capped Andes, and learn something about the ancient civilization of the Incas, as well as of the Mayas and Aztecs, and the contributions of these vanquished races to the arts and culture of the world. Interesting highlights on Latin American painting and literary development are presented in the volumes on Ecuador and Colombia, and popular national heroes of the republics are included in the program on Venezuela and Panama.

Mexico; the republics of Central America including Guatemala, Honduras, Costa Rica, El Salvador, and Nicaragua; the West Indies, Cuba, Haiti, and the Dominican Republic form the concluding volumes of the "Good Neighbor Tour." The Pan American Union also has available for club study other volumes more highly specialized, dealing with the Pan American movement, literature, art, and music.

Course No. 1, "The Good Neighbor Tour," is a comprehensive course of study on the Republics of Latin America, in the form of an imaginary tour around the Continent. It is composed of ten mimeographed volumes with material for 20 or more programs. The registration fee for the course is \$2.00. An outline of the contents of each volume follows:

- I. *Introductory Program—Source Material.* A geographical sketch of the Continent; source of supplementary material—motion pictures, speakers, music recipes; outline map; suggestions for the "ocean voyage."
- II. *Seminar on the American Republics and Inter-American Relations.* A survey "on board ship" of inter-American economic relations; political and juridical relations; and cultural relations.
- III. *Brazil—Uruguay—Paraguay.* Geographical and historical sketch of each country; Coffee in the Americas; Social Welfare; Customs of a Continent.
- IV. *Argentina—Chile.* Music and Dances; Christmas Customs; the Christ of the Andes; Contributions of the Americas to International Law.
- V. *Bolivia—Peru.* The Highland country; Ancient Civilizations of the Americas—The Mayas, Aztecs, Incas; Education in Latin America.
- VI. *Ecuador—Colombia.* Quito and its Art Treasures; Latin American Painting and Literary Development; Translations of Latin American Poetry.

- VII. *Venezuela—Panama*. Simon Bolivar and the other National Heroes of Latin America; Panama and the Canal; Conquest of the Tropics.
- VIII. *Republics of Central America*. Central American Court of Justice; Inter-American Transportation; Economic Gifts of the Americas to the World.
- IX. *Mexico—Cuba*. Land of the Mayas; Women in the Americas; Economic Interdependence of the Americas; United States Trade with Latin America.
- X. *Haiti—Dominican Republic—Puerto Rico*. The Citadel of Christophe; the last Resting Place of Columbus; Social Security Problems in Puerto Rico. *The Pan American Union—Survey of the Tour*.

Three other programs have been prepared by the Pan American Union, Course No. 2 is known as "Evolution of the Pan American Movement." This course is concerned with the development of inter-American co-operation in the fields of politics, economics, law, and cultural relations. It is a presentation of the historical evolution and the current factors that have made the Pan American movement the outstanding example of international co-operation, and a major force in the existing world order. This course affords a more detailed consideration of the subject than the general treatment provided in Course No. 1. Four mimeographed volumes have been prepared with material for 10 or more programs. The registration fee is \$1.00. An outline of the contents of each volume follows:

- I. *Historical Evolution of Inter-American Co-operation*. Deals with origins of the Pan American movement, early Inter-American conferences, inter-American conferences since 1889, permanent offices and agencies, and activities of unofficial organizations.
- II. *Inter-American Co-operation in the Preservation of Peace and the Defense of the Western Hemisphere*. Deals with machinery for the preservation of peace, specific applications of the principle of pacific settlement, and continental defense and preservation of the democratic idea as exemplified in foreign intervention, territorial transfers, and the defense of democratic ideals.
- III. *Inter-American Economic Co-operation*. Deals with bases of inter-American economic relations, elimination of trade barriers, inter-American financial co-operation, inter-American agricultural co-operation, and transportation and communications.
- IV. *Inter-American Cultural Co-operation*. Deals with intellectual co-operation in general, exchange of professors and students, co-operation in literature, art, music, public health and sanitation, and other features of cultural co-operation.

Course No. 3 carries the title of "Literature-Art-Music." This deals with the contributions of Latin America to the cultural life of the continent. It is a compilation especially prepared for groups interested in a study of the cultural development of the Republics of Latin America. Three mimeographed volumes, one devoted to each topic, contain material on the development of the subject in the Republics of Latin America and the achievements of Latin American artists in the respective fields. The volume on literature contains, in addition, translations from the works of notable Latin American authors; that on art, reproductions of Latin American paintings and sculpture; and the volume on music is accompanied by examples of music characteristic of the various regions of the continent. Price, 75 cents. Single volumes available at 25 cents each.

Course No. 4, "The Americans and the War," presents the attitude and the measures adopted by the American Republics in the present world conflict. It is a presentation of the specific application of the principles of inter-American solidarity, and the action taken by the American Republics for the defense of the Con-

tinant. Composed of a single volume, it contains the measures of a political, economic, and juridical character adopted at the meetings of ministers of Foreign Affairs and on other occasions. Price, 25 cents.

This, as well as the other material included in the club and study series, should be of interest to many secondary-school teachers and administrators. In addition to the courses of study, the Pan American Union publishes booklets descriptive of each of the countries of Latin America, their capital cities, and principal commodities. Inquiries concerning the "Good Neighbor Tour" club program or the other three programs, should be addressed to the Club Section, Pan American Union, Washington, D. C.

The Book Column

Pamphlets, Workbooks, Charts, and Maps

- Adventures in Camping*. New York: Lindlof Camp Committee, 10 Park Ave. 1943. 72 pp. Free. Describes what is being done for underprivileged children.
- Alliance for Guidance of Rural Youth. *Guided Rural Youth Migration—Steps in Action*. Washington, D. C.: National Education Association. 1943. 26 pp. Free. Suggested steps in action towards guided war and postwar rural youth migration; a report of an institute of 34 co-operating agencies.
- American Educational Research Association. *Teacher Personnel*. Washington, D. C.: National Education Association. 1943. 114 pp. \$1.00. Reviews the literature of this subject from June 1940 to June 1943.
- American Library Association. *Understanding the War*. Washington, D. C.: Federal Educational War Council. 1943. 26 pp. Mimeo. An annotated list of non-governmental materials—reliable, timely, and non-technical. It supplements a previous publication of the same title listing government publications.
- American Schools of the Air, Teacher's Manual*. New York: Columbia Broadcasting System. 1943. 100 pp. Free. A large polar projection air-age map of the world, together with two smaller global maps of the Eastern and Western Hemispheres extending from October 11, 1943 to April 28, 1944.
- American Vocational Association. *Vocational Schools and the War*, Vol. 18, No. 2. Washington, D. C.: The Association. 1943. 36 pp. 25c. Tells of the contributions to the war effort by the regular vocational program as well as the emergency programs for the training of industrial and agricultural workers.
- ANDERSON, G. L. *Adapting the High School to Wartime and Postwar Needs*. Minneapolis: Univ. of Minnesota. 1943. 53 pp. \$1.00. Sets forth concretely yet succinctly the modifications in the curriculum, in instructional procedures, in the student personnel program, and in the administration of the University of Minnesota High School that have been made as a result of the war and in anticipation of postwar needs.
- Anniversary Mass for the Philippines*. Washington, D. C.: Office of Special Services, Commonwealth of the Philippines, 1617 Massachusetts Ave., N. W. 1942. 12 pp. Free. A commemorative address given on the seventh anniversary of the inauguration of the Philippine Commonwealth and in memory of the thousands of Filipino and American soldiers, who gave their lives in the battle of the Philippines in the cause of freedom.
- Approved Recommendations of the St. Louis School Survey*. St. Louis, Mo.:

Dept. of Instruction, Board of Education. 1941. 151 pp. A program of improvement in instructional and administrative practices to be worked out during the next ten years. These recommendations pertain to curriculum, teaching and the organization and administration of the elementary and the high schools.

The Army Specialized Training Program. Washington, D. C.: Supt. of Documents. 1943. 20 pp. Essential facts about this program.

Association for Education in Citizenship, 19 Wellgarth Road, London, N.W. 11. Mrs. E. Nelkie, Secretary. A series of excellent, 24-page discussion guides on the general subject of "Unless We Plan Now." Each booklet is well outlined, the topics are capably discussed, and the aids are carefully chosen. Ten of the series so far published are: (1) *How to Lead Discussion Groups* by E. M. Hubback, (2) *The Democratic Idea* by Francis Williams, (3) *Is Britain a Democracy* by Frank Hardie, (4) *Our Town* by Elizabeth Halton, (5) *Economic Reconstruction* by M. Joseph, (6) *Health* by Capt. N. Morris, (7) *Out of School Education* by J. L. Longland, (8) *The Schools Today and Tomorrow* by Joan Simon, (9) *Population* by R. N. Titmuss, and (10) *The Cinema* by Basil Wright. Price, three pence, each.

ATHEARN, C. D. *Teaching Guide to a Study Unit on the Postwar World.* New York: Scholastic, 220 E. 42nd St. 1943. 32 pp. Supplied free with classroom orders for Scholastic Magazines. An aid for classroom study of the postwar world. To help teachers organize material for 32 study units on the postwar world, provides discussion questions and suggested activities based on Scholastic publications.

Australian News and Information Bureau, 610 Fifth Avenue, New York. The following publications are available:

The Geography of Australia. 1942. 24 pp. Free. A course of study for intermediate grades.

The Job Australia is Doing. 1943. 50 pp. Free. Excellent informative material; easy, interesting reading.

Australia. A monthly 8-page publication of brief factual pictures of current life in Australia and her contribution to the war effort of the United Nations.

BATHURST, E. C. *Conservation Education in Rural Schools.* Washington, D. C.: National Education Association. 1943. 114 pp. 50c. An excellent yearbook showing what teachers and children can actually do on their big problem of our country.

BERNAYS, E. L. *Democratic Leadership in Total War.* Cleveland: E. D. Whittlesey, Dir. of Public Information, Western Reserve Univ. 1943. 6 pp. Free. Suggests a democratic way of building unity here now and of holding this nation together in the confusion which is bound to arise in the reconstruction period after the war.

Bibliography of Visual Aids for Pre-Induction Training. Washington, D. C.: U. S. Office of Education. 1943. 79 pp. Free. Designed to aid the pre-induction teacher in selecting appropriate visual materials with which to implement his instruction in electricity, machines, shopwork, radio, automotive mechanics, pre-flight aeronautics, physical fitness. Includes listing of 16-mm. and 35-mm. films, both sound and silent, producers, addresses, and prices.

BIGELOW, M. S. *Some Dangerous Communicable Diseases.* New York: The American Social Hygiene Association. 1943. 32 pp. 10c. A special unit of study in health education for secondary schools and junior colleges with special emphasis to syphilis and gonococcal infections.

BLACKWELL, GORDON W. *Toward Community Understanding.* Washington 6, D.C.;

- American Council on Education. 1943. 98 pp. 75c. The author distinguishes three basic elements: (1) factual knowledge of community structure, (2) skill in the methods of democratic group living, and (3) a sense of social responsibility. In the sixteen collegiate institutions visited he found programs that aimed at this understanding through such experiences as comprehensive courses, field trips, fact finding, volunteer service in social agencies, social-action clubs for students, whole college programs tending toward social service, and co-operative undertakings worked out by town and gown together.
- BOUSHALL, T. C. *Business and Education, An Imperative Partnership*. Washington, D. C.: Chamber of Commerce of the U. S. 1943. 14 pp. Free. A laymen point of view concerning education.
- BOYD, G. R. *The Construction of an Instrument for Measuring Attitudes Toward Desirable Food Practices*, Vol. 16, No. 1. Lexington: Univ. of Kentucky. 1943. 85 pp. 50c. Describes the project of constructing an instrument which will measure the favorableness of pupils' attitudes toward desirable practices in the production, storage, and consumption of food. Contains the *Attitude Questionnaire* and the *Free Association Test* used in the experiment.
- British Youth Answers the Call*. New York: British Information Services. 1943. 32 pp. Free. A description of what British youth are doing in the war effort. Shows the British approach and appeal to youth organizations. Attractively illustrated. Also available free from the same source is the 20-page pamphlet on *British Youth Activities in Wartime*.
- BRODIE, FAWN M. *Peace Aims and Postwar Planning*. Boston: World Peace Foundation, 40 Mt. Vernon St. 1942. 53 pp. 25c. A bibliography, selected and annotated, comprising books, pamphlets, and articles published in the United States and England between 1939 and July, 1942.
- BROOKS, CATHERINE. *Opportunities for Advanced Study of Music in the United States*. 1943. 78 pp. Mimeo, 50c. A survey of institutional music instruction above the elementary or introductory level, it is a classified index of courses in music offered in 72 institutions in the academic year 1941-42. Parts of it are written in English, Spanish, and Portuguese.
- BROWS, ZAIDEE. *Short Cuts to Information*. New York: H. W. Wilson Co. 1943. 28 pp. 25c. Starting out with aids of a general nature, *Short Cuts* describes publications available in most libraries that enable the reader to find information about any book; to find the best books on a subject; to find pamphlets and magazine articles on a subject; and to find aids on library use. Then the reader is guided to the best sources of information on various topics, such as child care, marriage relations, recreation, mental hygiene, the war, and government publications.
- Burns *High School Handbook*. Burns, Kansas: Student Council. 1943. 76 pp. For the guidance of high-school students.
- Civil Aeronautics Administration. *Fundamentals of Elementary Flight Maneuvers*. Washington, D. C.: Supt. of Documents. 1943. 66 pp. 20c. Tells in very simple language how to fly an airplane, should be a valuable reference for any secondary principal, and will be a valuable text for teachers of pre-flight aeronautics courses.
- Commission to Study the Organization of Peace. 8 West 40th Street, New York. Some of the publications are:
Bulletin, \$1.00 per year. Published periodically. It summarizes or carries in full suggestions for the future organization of peace.
Business, Free Enterprise, and the Organization of Peace by W. D. Head.

1943. 20 pp. Free. Discusses the stake which American business and free enterprise have in the organization of a peaceful world order.

Winning the War on the Spiritual Front. 1943. 32 pp. Free. Contains material for discussion on five topics: the control of war, the establishment of law and justice, the interdependence and responsibility of the United States in organizing a durable world peace, and the role of the United Nations in this task. There are suggested questions and pamphlet references at the end of each chapter. The final chapter is entitled "How Can You Help?"

Conserve Critical Resources. Washington, D. C.: Office of Civilian Defense. 1943. 16 pp. Free. Shows how the public can help to save in seven industries. Also see the 16-page pamphlet from the same source, *Your School Can Salvage for Victory*. This is a handbook of suggestions for superintendents, principals, and teachers.

Consumer Education for Wartime Living. Harrisburg, Pa.: State Council of Defense. 1943. 99 pp. While a manual prepared to meet the needs of consumers in wartime, it is equally useful in planning a postwar program for the schools. Contains a number of outlines of units for high-school teaching.

Co-ordinator of Inter-American Affairs. Washington, D. C. Among the many publications this agency has available, the following are listed:

Americas United. 46 pp. A summary of the co-operative efforts of the American republics since September 1939.

Some Specific Suggestions for Inter-American Programs. 17 pp. A list of suggestions to encourage an active community interest in inter-American affairs.

All the publications are limited in quantity. In many instances the supply is soon exhausted. Teachers should ask for only the minimum required for circulating in a study unit and then the booklet should be passed on to another teacher or another group after the study is completed. If this is heeded, teachers who need the material and have not yet had an opportunity to obtain it, can probably get some of their materials.

CROF, J. R. *Army Selectee's Handbook*. Stanford Univ.: Stanford Univ. Press. 1943. 80 pp. 56c. Answers in a simple yet complete manner the thousand-and-one questions which every selectee asks and removes much of the mystery which lies beyond the induction center. Written for the young men who will be called to military duty, this booklet provides basic orientation and guidance during the first several weeks of military training. The main divisions are Planning Your Army Career; Induction; Reception Center; Military Discipline, Courtesy, and Customs; Duties You Will Perform; Replacement Training Centers, Officer Candidate Schools; and the American Soldier at Home and Abroad. It contains a wealth of information, well organized, and interestingly presented. It is a booklet that every boy soon to be eligible by age for induction should have as his very own to read and study. Every school will be doing a real service by giving one of them to each boy approaching the induction age.

DEBOER, J. J., Ed. *Policies and Practices in the Improvement of Reading*. Chicago: National Council of Teachers of English. 1943. 72 pp. A group of authorities in the field analyze reading needs and methods.

DEIGNAN, H. C. *Siam—Land of Free Men*. Washington, D. C.: Smithsonian Institution. 1943. 18 pp. An interesting story of the history and geography of this great peninsula. Illustrated.

EELLS, W. C. *Success of Transferring Graduates of Junior College Terminal Curricula*. Washington, D. C.: American Association of Junior Colleges. 1943. 28 pp. A nation-wide study showing trends and significant conclusions.

- EELLS, W. C. *Up-Grading and Out-Grading in Business Education*. Cincinnati: Southwestern Publishing Co. 1943. 39 pp. 50c. The Annual Lecture Number 1 of the Delta Pi Epsilon Lectureship in Business Education pointing out development in business and the needs for a broad thorough training.
- EMBREE, J. F. *The Japanese*. Washington, D. C.: Smithsonian Institution. 1943. 42 pp. The story of the origin, national social structure, family and household cycle of life, and the religions of the Japanese.
- Facts and Figures About the Philippines*. Washington, D. C.: Office of the Resident Commissioner of the Philippines. 1942. 64 pp. Free. Interesting facts and history of this triangular group (115,000 sq. mi.) of islands consisting of 7,083 of which only 2,441 have names. Contains many interesting pictures.
- FISHER, E. J. *Counseling the Foreign Students*. New York: Institute of International Education. 1943. 28 pp. Free. Describes a program and the need for this service. Also lists of colleges and the names of their foreign student advisers; also a table showing number of men and women in colleges and universities in the United States by country of origin.
- FLEMLIN, G. E. *Science*. Upper Montclair: The New Jersey State Teachers College. 1943. 43 pp. 75c. Mimeo. An excellent testing of audio-visual and teaching aids to supplement the teaching of general science in all grades, giving name, source, description, and cost.
- The Foundation of Freedom*. Washington, D. C.: National Educational Association. 1943. 32 pp. The annual report of the Executive Secretary of the NEA. Many illustrations.
- Games for Children*. New York: National Recreation Association. 1943. 62 pp. 50c. A group of games for all ages classified under singing games, tag games, relays, ball games, active games, quiet games, and nature games.
- GRAN, J. M. *Journalistic Practice*. St. Paul, Minn.: North Central Publishing Co. 1942. 132 pp. A series of tested units in journalistic English designed to direct the study in a year's study of whatever texts are used. For the busy teacher, the Units should provide an effective laboratory manual which will lighten the load of initiating a group of beginners while directing a school paper.
- Guidance: Studies, Status, and Proposed Program*. St. Louis Mo.: Board of Education. 1941. 54 pp. Information on where St. Louis high-school graduates go, the status of guidance in the St. Louis schools, as well as a proposed program for St. Louis.
- HARRIS, PAUL. *Youth Can Count*. New York: Associated Press. 1943. 61 pp. 60c. Tells what high-school youth can do now that counts. This is done by means of relating stories that have naturally occurred.
- HEAD, GAY. *Hi There, High School*. New York: Scholastic Publications. 1943. 72 pp. 20c. A student's handbook. Each chapter has a pen-sketch of high-school students in action. Contains a dictionary of high-school slang and a daily program chart.
- High-School Victory Corps Number*. Boston: The Palmer Co. The October 1943 issue (Vol. 64, No. 2) of *Education*. 60 pp. 50c. A series of 17 articles about the history and development of the High-School Victory Corps edited by W. D. Boutewell, Information Director of the Corps.
- HILTON, M. E., Ed. *Guide to Guidance*. Vol. V. Washington, D. C.: National Association of Deans of Women. 1943. 68 pp. \$1.00. An annotated bibliography of 1942 publications in the field of guidance.
- HOLY, T. C., AND DOTY, CORNELIA. *Survey of the Girls' Industrial School, Delaware, Ohio*. Columbus: Ohio State Univ. 1942. 288 pp. \$1.50. Describes the

program and gives recommendations. To the person interested in social hygiene, this report will be most helpful and informative.

HOLY, T. C., AND FLESHER, W. R. *Comparison of the Costs per Pupil in Average Daily Attendance in Ohio County School Districts from July 1, 1941 to June 30, 1942*. Columbus: The Bureau of Educational Research, Ohio State Univ. 1943. 9 pp. Mimeo. An excellent statistical analysis.

HOLY, T. C., AND FLESHER, W. R. *Cost per Pupil in Average Daily Attendance in Ohio City and Exempted Village School Districts from July 1, 1941 to June 30, 1942*. Columbus: The Bureau of Educational Research, Ohio State Univ. 1942. 33 pp. Mimeo. An excellent statistical analysis.

HORHEIMER, M. F., NAD DIFFER, J. W., EDITORS. *Educator's Guide to Free Films*. Randolph, Wis.: Educators Progress League. 1943. 169 pp. \$3.00. Mimeo. This third annual edition completely revised is an excellent and reliable guide to the source of free films. It lists 2,056 films—493, 16-mm. silent; 1,044, 16-mm. sound; 187, 35-mm. silent; and 332, 35-mm. sound. About 150 slide films are listed. In listing the films, the names of the films, whether 16-mm. or 35-mm., whether sound or silent, the number of reels, the agency through which it is available, the charge if any, and an excellent annotation are provided for each. A new section of Wartime Education, the title index, and the source index giving the address of the agency add much to its usability.

Important Facts About Texas Oil. Dallas, Texas: The Texas Mid-Continent Oil and Gas Association. 1943. 40 pp. Free. Part devoted to information on the oil industry.

Indiana State Teachers Association. *Public School Expenditures in Indiana*. Indianapolis: The Association. 1943. 19 pp. 25c. Mimeo. A group of ten tables on enrollments and expenditures.

Indiana State Teachers Association. *Public School Expenditures in Indiana. Handbook*. Indianapolis: The Association, 240 Hotel Lincoln. 1943. 58 pp. While dealing with Indiana state legislation, the material dealing with living costs and teachers' salaries, and the salaries of other groups will be found helpful by many out-of-state school administrators. It is well organized and carefully computed.

Information for Public Speakers on Food Waste. Washington, D. C.: U. S. Department of Agriculture, Food Distribution Administration. 1943. 21 pp. Mimeo. Free. Contains information on how every American can add to our food supplies by helping to reduce food waste.

Informative Classroom Picture Series, *Mexico*. Grand Rapids, 7, Michigan.: Informative Classroom Picture Publishers. 1943. 15 pp. plus 15 plates in a portfolio. \$2.00. Contains interesting information and attractive plates of the customs, clothing, food, industries, natural resources, plant and animal life, topography, climatic conditions, and other information about this country. This is the first of a series of ten to be published. *Brazil* and *Australia* have just come off the press. Others to follow include India, China, Russia, Alaska, Hawaiian Islands, South America, and Canada.

Institute of International Education. *News Bulletin*. New York: The Institute. 25c per annual subscription. A monthly publication (October-May) dealing with international problems. For example, the May, 1943, issue treated on the following topics: "The United States," "Brazil," and "Education in Paraguay;" also see the *Twenty-Fourth Annual Report of the Director* (Oct. 1943. 71 pp. Free) describing the work of the Institute.

Inter-Americanism in Nineteen Forty-two. Washington, D. C.: Univ. of George

- Washington, 1942. 77 pp. The six speeches given at the annual mid-winter conference of the Inter-American Center.
- JONES, E. S. *The Writing of Exposition*. Urbana: Illinois Association of Teachers of English. 1943. 24 pp. 15c. (Published monthly October-May, inclusive, for \$1.00 per year). An approach through a discussion of what to write about.
- KELSEY, R. W., AND DANIELS, A. C. *Handbook of Life Insurance*. New York: Institute of Life Insurance, 60 E. 42nd St. 1943. 64 pp. 15c. The Institute will furnish single copies free for the personal use of teachers and school officials. Cloth bound copies of this booklet may be purchased from G. P. Putnam's Sons, New York City. Here is a clear concept of the role life insurance plays in the welfare of the family and the nation. It describes how life insurance operates, the privileges and benefits contained in life insurance policies, and the way in which these provisions can be used to meet changing needs. It shows how to derive the full value from the ownership of life insurance. Teachers will find this booklet written well within the reading comprehension of junior or senior high-school pupils and will find it adaptable in its present form for study as a unit of instruction in a consumer education course. Certainly such a unit of instruction might well become a part of every secondary-school pupil's course, especially when 67 million people in the United States own policies which annually set aside in life insurance over 4 billion dollars. The information is unbiased and reliable.
- KEMPER, HOMER. *Preparation for Naturalization of Foreign-Born Adults*. Albany: New York Department of Education. 1942. 76 pp. Presents the background and perspective of the government and ideals to the thousands of foreign-born persons seeking citizenship in the United States. It is a practical guide to teachers in preparing aliens.
- KIMBALL, K. F., AND BHAGWAT, M. R. *Your Future in Chemistry*. Chicago: Science Research Associates. 1943. 49 pp. 60c. An excellent presentation of occupational information about this field. The many ramifications of this extensive field are interestingly related.
- KLIER, FRANK J. *Language Teaching in Wisconsin Public High School, 1941-42*. Madison, Wis.: Department of Public Instruction. 1943. 78 pp. This is the first complete survey of its kind in Wisconsin. Aside from filling a need in circular information, this study is very timely, for languages are expected to assume an increasingly important role in the postwar world. The Intensive Language-Training Program now conducted for military personnel at the University of Wisconsin and at many other schools in the United States, does more than demonstrate the global character of the conflict. It also shows the need for a much broader knowledge of foreign tongues and thought to the effect that America may intelligently play its proper role in the reorganization of the peace-time world. Here is the answer at least for one state of that practically unanswered question concerning the status of foreign languages in the secondary schools. Certainly here is information that is basic to any broad and realistic plans for immediate or postwar foreign language instruction in the high school.
- Learning to Speak Effectively*. Washington, D. C.: Association for Childhood Education. 1943. 32 pp. 35c. Points out the importance of speech and voice in everyday living, gives help in recognizing speech defects and in understanding some of their causes.
- LEWERENZ, A. S. *Civilian and Military Occupational Specialists*. Los Angeles: City Board of Education. 1943. 44 pp. An excellent booklet which will help high-school youth to discover the necessary skills and training to do a specialized

job in the military service and at the same time have vocational value to him after he is in civilian life again.

- LEWERENZ, A. S. *From School to Armed Forces*. Los Angeles: City Board of Education, 1943. 16 pp. This little booklet is being made available to all seventeen-year-old boys in the Los Angeles school system as part of their pre-induction military guidance program.

Looking Forward with the Parma Public Schools. Parma, Ohio: Public Schools, 1943. Mimeo. A handbook for the administrative and teaching staff of this school. Excellent as an example of interpreting the school's philosophy to its personnel.

- MARTIN, FLORENCE, AND WHITE, M. R. *Songs Children Sing*. Chicago: Hall and McCreary Co. 1943. 126 pp. 50c. A collection of the best-loved folk songs, Mother Goose, and nursery songs, patriotic songs, Christmas Carols and hymns, and singing games with concise instructions.

McHARRY, LIESETTE. *Speech for Every Student Every Year*. Urbana: Illinois Association of Teachers of English, 1943. 12 pp. 15c. Reprints of two articles: the one above and "Reading for High-School English Classes."

- McHENRY, P. T. *How to Teach Shopwork in Vocational Schools for War Production Industries*. Bloomington, Ill.: McKnight and McKnight, 1942. 46 pp. 25c. Prepared as a basis for group or individual study in preparation for such teaching. Helpful to those planning a similar course of study.

MERGENDAHL, C. H. AND FOSTER, B. R. *One Hundred Problems in Consumer Credit*. Newton, Mass.: Pollak Foundation for Economic Research, 1943. 56 pp. 10c. A list of 100 problems arranged for use by all grades from junior high school through college.

- MERRIAM, T. W., AND OTHERS. *Religious Counseling of College Students*. Washington, D. C.: American Council on Education, 1943. 80 pp. Describes typical problems of student adjustment and indicates how the religious resources of any institution or community can be focused upon them. Principles, procedures, techniques, resources are discussed in a thoroughly practical manner written from the lay point of view. Every teacher, student counselor, administrator, and religious worker will find challenging and helpful suggestions.

Modern History. New York: Board of Education, 1942. 74 pp. A course of study and syllabus for the tenth grade.

- MORRISON, J. C. AND SOPER, W. W. *A Study of Pupils in New York's Rural Secondary Schools*. Albany: Univ. of the State of New York, 1942. 38 pp. An analysis of the later school experiences of pupils enrolled in the eighth grade of the schools in supervisory districts during the first half of the school year 1933-34 with special references to the influence of under-ageness and over-ageness at entrance to grade eight.

MOTT-SMITH, MORTON. *A Course in the Fundamentals of Electricity*. Pittsburgh: Westinghouse Electric and Manufacturing Co. 1943. 65 pp. 15c. Based on an official outline prepared by the U. S. War Department for use in Pre-Induction Training Courses. 40 lessons.

- MUSSELMAN, VIRGINIA. *Teen Trouble, What Recreation Can Do About It*. New York: National Recreation Association, 1943. 24 pp. 10c. A discussion of the many problems arising in this age group with some suggestions as to what can be done.

National Resources Planning Board. *National Resources Development Report for 1943*. Part I. *Post-War Plan and Program*. 1943. 81 pp. 25c. Part II. *War-time Planning for War and Post War*. 1943. 25c. Washington, D. C.: Supt. of Documents. Part I brings together some of those plans both for the transi-

tion period immediately following the cessation of hostilities and for the longer range period of postwar developments of our expanding economy. Part II presents the current planning activities for stabilization and development.

North Plainfield High School. *The Answer Book*. North Plainfield, N. J.: Principal H. G. Spaulding. 1943. An excellent mimeographed pamphlet dealing with the administration of this high school for teacher use.

On the Target. Los Angeles: Office of the Supt. School Publication No. 383. 1942. 42 pp. Free. An excellent review of what the schools of Los Angeles are doing in the war effort arranged by subject fields.

OWEN, W. M. *Spur Gearing*. Bloomington, Ill.: McKnight and McKnight. 1943. 63 pp. 72c. Deals with a few of the theoretical points about gearing in a simple manner as a basis for understanding gears.

Passaic Public Schools. *Revision of English Course of Study*. Passaic, N. J.: Public Schools. 1943. 10 pp. Mimeo. A preliminary report approved tentatively as a working criteria for the selection of subject matter, experiences, teaching methods, and evaluative techniques in an English course.

PADILLA, EZEQUIEL. *Economic Security and Democratic Regime in the Postwar World*. Mexico: Dept. of State for Foreign Affairs. 1943. 22 pp. An address by the Secretary of Foreign Affairs on the inauguration of a series of lectures on "Economic Problems of the Americas" at the University of Mexico.

Outlines of Our Times. Chicago: F. E. Compton & Co. 1943. 16 pp. Free. Study outline for current events, the U. S. at war, and our American heritage.

PATTERSON, W. A. *The Airplane in the Scheme of Post-War Transportation*. Chicago: United Air Lines. 1942. 31 pp. Free. The president of the United Air Lines discusses the future of airplanes in commerce.

Physical Education as a Profession. Washington, D. C.: American Association of Health, Physical Education, and Recreation. 1942. 16 pp. Reprint. Excellent for occupational information.

PIDGEON, M. E. *Women's Work and the War*. Chicago: Science Research Associates. 1943. 49 pp. 60c. A good overview of what women can and are doing as their part in the war.

Preserving Democracy. East Lansing: Michigan State College, Extension Division. Free. A series of pamphlets prepared with the idea of making people more than passive believers in democracy. The series so far published include I. *What is Democracy?* (20 pp.); II. *Human Material for Democracy* (20 pp.); III. *Civil Liberty* (24 pp.).

A Program for Michigan High Schools. Lansing: State Dept. of Education. 1943. 6 pp. Free. Mimeo. A basic statement of policy for the improvement of secondary education in Michigan as well as a progress report on Michigan's curriculum-revision program.

Publications of the Industrial Arts Co-operative Service, 519 West 121st Street, New York. Published in 1943.

Fisher, Anna M. *Pan America*, 24 pp. 60c. Mimeo. An excellent outline for a course of study with bibliography.

Patrick, S. L., and Kim, A. D. *Directions for Making a Two Foot Globe*. 14 pp. Mimeo. 35c. Directions carefully presented.

Publications of the U. S. Department of Labor, Washington, D. C. 1943. Free. *Community Action for Children in Wartime*. 9 pp. A plan for local action.

Wartime Employment of Boys and Girls Under 18. 16 pp. Discusses the situation and makes recommendations.

Which Jobs for Young Workers? No. 6. 6 pp. "Advisory Standards for Welding Operations." No. 7. 12 pp. "Advisory Standards for the Operation of Metal-Working Machines."

Publications of the U. S. Office of Education, Washington, D. C., published in 1943. Available through the Supt. of Documents for the price indicated. Free ones through the U. S. Office.

Community Occupational Surveys by W. W. Zapoleon. 200 pp. 25c. Presents techniques for surveys based on the experience of those who have conducted such. Here is a publication no one interested in occupational problems can afford to be without.

The Far East. 13 pp. Free. An annotated list of available units, courses of study, and other curriculum material.

The Far East. 9 pp. Free. An annotated list of periodicals for teachers and librarians.

The Far East. 14 pp. Free. Annotated sources for curriculum materials. A revision and enlargement of an earlier pamphlet of the same title.

Inter-American Co-operation through Colleges and Universities. 34 pp. 15c. Describes the programs now in operation in colleges and universities emphasizing inter-American friendship and understanding.

National Unity Through Intercultural Education. 34 pp. 15c. Describes ways in which schools as well as other agencies have tried to emphasize unity and to nurture attitudes of friendliness and good will. Covers both elementary and secondary level.

Some Early Effects of the War upon Public Schools. 13 pp. Free. Statistics based on October, 1942, data on pupil enrollments, teacher shortage, and teacher turnover.

Training High-School Students for Wartime Services to Children. 60 pp. 10c. Discusses organization and development of such a training program and describes a hypothetical community in which such a training project is under way. Also describes what high-school pupils are doing to the program of services to children.

Understanding the Other American Republics. 32 pp. 20c. Contains a wealth of suggestions to teachers for classroom application; while written for use of elementary-school teachers, there is much that is suggestive for use in the secondary school.

Publications of the Public Schools of Portland, Oregon, 631 Northeast Clackmas Street. These units for twelfth-grade social studies classes may be secured for 25 cents each to cover cost of mimeographing and mailing. Two units, *Wartime Democracy* and *Post-War Planning*, are in preparation. The units that have been prepared to date are:

The World at War, Unit I. 17 pp. A study of the nations involved with a historical sketch of the causes of the war with the political, social and economic complications and alignments.

The War on the Home Front, Unit II. 10 pp. The purpose of this unit is to give pupils an understanding of why and how this war is affecting their daily lives as well as the needs of the nation.

Armed Forces, Unit III. 9 pp. The purpose of this unit is to acquaint the pupil with the various branches and offerings of the Armed Services.

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September 1914

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